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Psychological Abstracts

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PSYCHOLOGICAL ABSTRACTS

VOL. I, No. 1

JANUARY, 1927

GENERAL

1. **Burrow, T.** *Psychoanalysis in theory and in life.* *J. Nerv. & Ment. Dis.*, 1926, **64**, 209-224.—The author states that he and his co-workers give promise of the inception of a more comprehensive psychoanalytic technique applicable to social units as well as to the single individual. Man must choose whether "he will blindly protect himself against the recognition and acknowledgment of the vicarious element of habituation and compromise within his own unconscious or whether he will stand for a mode of consciousness that flings away every habitual protection and accepts only the conditions of life as they unfold themselves in the development of his own personality as well as in that of others" and "whether life will be a theory or system corroborated by the technical outfit of the clinic or whether it will be the deeply fulfilled experience that comprises consciousness in its organic reality." The definite biological concept on which this thesis rests posits a societally organismic continuum as the essential basis of consciousness. To understand this concept it will be necessary to replace the more or less arbitrary divergencies of personal outlook with a conception that attempts to stand far enough removed from our personal mode to envision within its more ample formulation this personal outlook as well. It will be necessary to recognize our tendency to personalistic delimitation due to the unconscious systematization of the restricted individual unit and in this way to envisage consciousness anew from the inclusive basis of its societal meaning.—*C. P. Armstrong* (Boston Psychopathic).

2. **Carmichael, L.** *What is empirical psychology?* *Amer. J. Psychol.*, 1926, **37**, 521-527.—The phrase *empirical psychology* is used in at least three major senses in current psychological discussion: (1) to describe a psychology which is based upon experimentally discovered data; (2) to characterize a psychology which holds that behavior and experience are wholly developed in the ontogeny of the individual; and (3) to refer to a discipline concerned with the presentation of a consistent and reasoned account of mind in use. No logical relationship exists between these three uses, which may serve to make homogeneous their disparate meanings. It seems that less ambiguity would result if *empirical*, in the first sense, be still used as broadly synonymous with experimental, that *empirical* in the second sense be supplanted by *ontogenetic*, and that *empirical* in the third sense be supplanted by *rational*.—*G. J. Rich* (Institute for Juvenile Research).

3. **Cattell, J. McK.** *Some psychological experiments.* *Science*, 1926, **63**, 1-8; 29-35.—Experiments with simple and compound reactions, measurements of individual differences and of the effect of various conditions upon the reactions, experiments in association, studies of the methods and course of learning, the development of mental tests and the technique of character judgment by the order-of-merit method indicate the possibilities of experimental work in psychology. A scientific psychology of human welfare may be expected to develop in due time, so that psychology may supply economic values equal to those of the physical and biological sciences, as well as human values of even greater significance.—*G. J. Rich* (Institute for Juvenile Research).

4. **Helson, H.** *The psychology of Gestalt.* *Amer. J. Psychol.*, 1926, **37**, 189-223.—Perhaps the chief advantage which the work of the configurationists

enjoys lies in the fact that it is designed to illustrate and support an all-embracing theory. We see this at its best when the single, often uninteresting, fact becomes fraught with new significance as it is brought into relation with *Gestalttheorie*. The theory of *Gestalt* has helped widen the borders of psychology so as to make possible a more fruitful attack on meaning, mind and behavior. It has indicated where different points of view and some apparently contradictory statements of fact may be brought into agreement. Yet withal one feels that the concept of *Gestalt*, if it is to be of the most service, should be more precisely defined and limited in order that we may be able to know exactly what it is, how it affects a given problem, and where the causal factors are to be found. A single concept for all psychology is both a strength and a weakness. While it is true that we are striving for unity, there are still many stubborn facts which refuse at present to be ordered within any set scheme. Eventually we may hope to erect some universal postulates which shall do for psychology what relativity and mathematics have done for physics, but not until the various sub-classes of psychology have been more fully investigated and brought into closer relations with one another. The problems centering about the *Gestalt* may well take the efforts of a generation of psychologists if they are to clarify the concept, trace out its implications, account for its effects, and reduce it to something more general and fundamental.—*G. J. Rich* (Institute for Juvenile Research).

5. **Mukherji, K. C.** *The biological concept of libido.* *Amer. J. Psychol.*, 1926, **37**, 553-556.—Neural and psychic energy is produced as a consequence of the specialization which the biological energy undergoes in evolution. So the psychic and neural energies are but the two differentiated forms of the biological energy, differing so far from each other in refinement that each is governed by its own laws and works its own way. They are so inseparably connected that they constitutionally form a functional unit which expresses itself in the performance of pure instincts. It is this inborn neuropsychic energy which is to be biologically conceived and conveniently used as libido. All instincts are related to this libido and derive their functional energy from it.—*G. J. Rich* (Institute for Juvenile Research).

6. **Ogden, C. K.** *The meaning of psychology.* New York: Harper, 1926. Pp. xxi + 326.—A comprehensive introduction to psychology, the purpose of which is to deal as concisely, and in as simple language, as possible with the subject in the light of the most recent advances. The author attempts to cover the entire field of psychology, combining and comparing the outstanding contemporary points of view. The subject matter of psychology he defines as such mental events as thinking, attending, remembering, and the like. The "main instrument" of psychology is introspection. The genetic or causal treatment is emphasized, as opposed to the general treatment of classification and description of "academic psychology." After a preliminary chapter comes a discussion of the body and mind, in which are presented various theories concerning the relationship existing between the two. Emphasis is placed upon the "double language" theory, the difference between observation from within (psychological) and from without (physiological and neurological) forming the basis for the division of subject matter in the remaining chapters of the book. The treatment from the external aspect deals first with "Impulse" and "Inhibition" and "How the Brain Works," a neurological basis with some emphasis upon the possibilities of the chronaxy theory. A chapter is given to "Purpose and Interest," the former conceived of as a physiological characteristic of behavior, the latter as an activity set going and maintained by a need, which is an internal disequilibrium. Mental evolution is treated under "Mental Growth in Animals"; a separate chapter on "The Mentality of Apes," with a discussion of Köhler's work and a brief explanation of *Gestalt* psychology; and "Mental

Evolution in Man." Two differentiating factors between animals and man are emphasized: the development of free images and the use of speech. A chapter on "Behavior" completes the treatment from the external point of view. The two doctrines of behaviorism, that psychology deals only with what can be observed, and that consciousness is a meaningless term, are considered: the first principle and the methods connected with it are of real value, but the second is valueless. Observation from within is next taken up. In a chapter entitled "Looking Inwards" four questions are raised: (1) What is the Self? (2) Where is experience located? (3) What kind of a thing is experience? (4) What are the essential aspects of experience? In "Looking Outwards" sensation, perception, and recognition are taken up, also the psychology of fictions. "How We Think" is then discussed, with ideas as the central problem: the majority of the processes in our minds which represent things, and so are ideas, are probably neither images nor words. Association of ideas is treated with the direction of interest as the governing principle, contiguity working only inside this principle. Concerning emotion the author considers that the James-Lange theory may be accepted, but that it does not tell the whole story. A brief treatment of psychoanalysis is taken up with emphasis on the Freudian conception, but with some consideration of the principles of Jung and Adler. A chapter is also given to abnormal phenomena. The concluding chapter, "Looking Forward," points out that a knowledge of psychology may help in all departments of human activity. The ability to meet life satisfactorily must come through wisdom, and knowledge of oneself is the basis of wisdom. A bibliography of 66 titles, selected as representative of modern psychological opinion in the various fields, is appended.—*L. M. Harden* (Clark).

7. **Perrin, F. A. C., & Klein, D. B.** *Psychology; its methods and principles.* New York: Holt, 1926. Pp. x + 387.—The present book is an elementary text book written essentially from the behavioristic point of view. The authors classify the data of psychology under the following five rubrics: (1) the biological foundations of behavior, where the receptors (omitting the findings of experimental psychology dealing with sensory discrimination and the adjustments to the space characteristics of stimuli), the nervous system, and the effectors are discussed; (2) the psychological foundations of behavior, where the authors discuss the complexity of stimulus-response relationships, the laws of association, the conditioned reflex, and the "instinct hypothesis"; (3) the motivation of behavior, including physiological drive, emotions, and social motives; (4) learning behavior in human and infra-human animals; (5) intelligent behavior, which includes mental development, language acquisition, the nature of thinking, intelligence and ability, mental measurements, mental organization, and personality. The authors place much emphasis upon experimental material. Each subdivision is supplemented by a working bibliography. The style is clear and concise.—*W. S. Hunter* (Clark).

8. **Rignano, E.** *In che cosa consiste e donde il finalismo dei fenomeni psichici?* (In what consists and from whence is derived the finality of psychological phenomena?) *Riv. di Psicol.*, 1926, 22, 97-101.—A discussion showing that all phenomena of living matter are finalistic in nature in so far as they show mnemonic tendencies. As these tendencies are characteristic of the two elementary psychic phenomena, sensorial evocations and affections, upon which all the more complex psychic states are built, the whole of psychic life may be considered finalistic.—*T. M. Abel* (Cornell).

9. **Schoen, M.** *The elementary courses in psychology.* *Amer. J. Psychol.*, 1926, 37, 593-599.—The teaching of elementary psychology today falls short of what it might accomplish, due to the general effect of a number of defects: (1) The student is plunged at random into a sea of psychological data. (2)

The course is often treated as if it were but a preparation for more advanced work in psychology. (3) The course is often weakened by the adoption of a biased attitude which results in the presentation of a one-sided view of human nature. (4) The subject-matter is not presented in logical sequence. (5) The course is dogmatic in theory, but evasive in application. (6) Contentious material is introduced, which is of interest only to the specialist. A successful elementary course should aim to counteract quackery and exploitation in the name of psychology, to create a wholesome attitude towards psychology, and to inculcate in the student a tolerant, open-minded and broad attitude toward human affairs and human problems.—*G. J. Rich* (Institute for Juvenile Research).

10. **Spranger, E.** *Die Frage nach der Einheit der Psychologie.* (The problem of the unity of psychology.) *Sitzungsber. Akad. Wiss. Berlin*, 1926, 21-24, 172-199.—Psychology in its philosophical foundations shows certain lines of demarcation. Physiological psychology, which maintains the standpoint of the natural sciences, regards the mental as dependent upon the physical, either in a relation of causality or in one of substantial identity. A new feature enters into the situation, however, as soon as mental processes are conceived as endowed with the property of objective references, or intentionality, as, e.g., is the case in discussions of instinct, will and emotion. The situation is even more involved when the reference is not to a physical object, but to a meaning, which in the broadest sense is purely a mental affair. This outlines the two types of psychology, physiological psychology, or psychology as natural science, and mentalistic psychology, or the psychology of meaningful experience. The latter type shows many aspects, but constitutes a unity insofar as the various phases develop concurrently.—*E. G. Wever* (California).

[See also abstracts 35, 68, 103.]

SENSATION AND PERCEPTION

11. **Allen, F.** *The variation of visual sensory reflex action with intensity of stimulation.* *J. Opt. Sci. Amer.*, 1926, 13, 383.—In this paper there is first a brief resumé of former investigations on the Porter effect in regard to the retinal effects of varying the intensity of the light stimulus. Seventeen new Porter graphs have been obtained with bright colors, and instead of only two branches that the Porter graphs were believed to have, from three to five were found. The effect upon the retinal sensitiveness was measured for intensities corresponding to each branch of the graphs. It was found that this consisted of depression or enhancement of the sensitiveness of the retina. The relation of these discoveries to the following visual phenomena is discussed: the Fechner paradox, the Purkinje effect, the receptor process in respect to the Hering, Eldridge-Green, Ladd-Franklin and Young theories, the Weber-Fechner law, equilibrium effects, invariable colors, the self light and sensation process, the duplicity theory, reciprocal innervation, and the partial reconciliation of the Young and Hering color theories.—*D. B. Judd* (Bureau of Standards).

12. **Ames, A.** *Cyclophoria.* *Amer. J. Physiol Opt.*, 1926, 7, 3-38.—Very little has been known about this condition, which is due to a rotation of the eyes in opposite directions, with the effect of causing the fields of vision of the two eyes to appear to be rotated relative to each other about the point of fixation. The present method determined the amount of torsion of the eyes and of their rotation while not disassociated. Many results are given. The author shows that the normal eye possesses torsional power and there are certain individual differences in the inward and outward torsion of the eyes. It is also found that

the rotation of the eyes is greater when they are not disassociated than when they are disassociated. These findings are brought into relation with the problem of cyclophoria.—*S. W. Fernberger* (Pennsylvania).

13. **Banister, H.** A suggestion towards a new hypothesis regarding the localization of sound. *Brit. J. Psychol. (Gen. Sect.)*, 1926, 17, 142-153.—Ten experimental findings are listed which must be subsumed by an adequate localization hypothesis. The present suggestion accepts the usual physiological explanations of the impingement of sound waves on the tympanum and the conduction of discrete nervous impulses, separated by a "refractory period." It is also assumed, explicitly, that the nervous impulse in the auditory nerve fibres is initiated when the cilia are in a certain phase of their cycle. The possible criticism of the last assumption, that the impulse rate varies with the strength of stimulus, is met by supposing that the constant external stimulus is transformed into a periodical stimulation of the nerve endings. The hypothesis, which is introduced by results showing the dependence of localization on time interval, is that it is a certain "priority" which the first impulse has over the second which determines the localization. Besides the fact that the time interval must not be so great that two sounds instead of one are heard, the phenomena are complicated by the mutual relationships of the refractory period and the cycle of the cilia. The adequacy of the hypothesis to subsume the previously listed experimental findings is discussed in detail. An appended bibliography consists of 16 titles.—*R. R. Willoughby* (Clark).

14. **Boring, E. G.** Auditory theory with special reference to intensity, volume and localization. *Amer. J. Psychol.*, 1926, 37, 157-188.—The physiological mechanism of hearing is considered in a general way, without proposing any specific theory, with special relation to the facts of auditory intensity, volume and localization. In order to explain the greatest possible number of facts, a "frequency-theory" is adopted, in which quality is correlated with frequency and intensity with the number of specific nerve fibres stimulated. Intensive summation then requires some sort of integration in the brain, probably an excitatory dispersion similar to Bernstein's theory. The direct correlate of auditory intensity is the amplitude of the stimulus. The experimentally determined relationship between intensity and volume shows that degree of excitation and dispersion are related as would be expected, while the relation of volume and pitch is explained as due to lack of control of amplitude. The principle of cortical dispersion, combined with the assumption that the fibers from the two ears are distributed to adjacent regions of the brain, explains the phenomena of the intensity-theory of localization of sound, while the additional mechanism of inhibition reduces the time-theory to the intensity-theory and an appeal to the all-or-none law subsumes the phase-theory under the time-theory. Tonal volume is considered as a pre-spatial attribute. The problem which Ohm's law sets for a frequency-theory of pitch lacks a satisfactory solution at present. The refractory period of nervous excitation also presents difficulties, but there is reason to believe, in the absence of direct evidence, that it is short enough to account for the range of audible tones. The argument from tonal lacunae is not fatal to a frequency-theory, because the evidence for their existence is not at present conclusive.—*G. J. Rich* (Institute for Juvenile Research).

15. **Davis, L., & Pollock, L. J.** Studies in decerebration. III. The labyrinth. *Arch. Neur. & Psychiat.*, 1926, 16, 556-565.—The study consists of observation of ten animals that were decerebrated by the anemic method and their labyrinths destroyed intra-orally. An abstract of a protocol of one animal is given to illustrate the reactions of all the preparations. The conclusions are: (1) The labyrinths exert a strong reinforcement of extensor tone to the muscles of the neck, which produces both a fixed position of the head in extension and a constant

play of impulses to the extensor muscles even if the head be passively flexed. As a result, the forelegs assume an attitude of strong extensor rigidity in a decerebrate animal. (2) When the labyrinths are destroyed in a decerebrate animal and the head is allowed to drop from a position of extension, a lasting pattern of flexor rigidity is produced in the forelegs. The rigidity in flexion is as great as the extensor rigidity of an ordinary decerebrate animal. It can be modified by phasic reflexes. (3) When the labyrinths are destroyed in a decerebrate animal, the position of flexion of the head increases the extensor rigidity of the hind legs. Passive extension of the head reduces this rigidity but the hind legs are always in a position of extensor rigidity. Therefore the extensor rigidity of the hind legs is mediated chiefly through the body reflexes. (4) The labyrinths produce a reinforcement to the extensor muscles of the neck and body with a consequent rigidity in the forelegs so great as to present the appearance of certain phasic reflexes. (5) A single labyrinth exerts its influence bilaterally to the muscles of the body and the extremities.—*I. Rappoport* (Boston Psychopathic).

16. Dupuy-Dutemps, L. *Les modifications de la sensation de relief produites par les verres de lunettes décentrés et par les prismes dans la vision binoculaire.* (The modifications of the sensation of relief produced by decentered spectacle lenses and by prisms in binocular vision.) *Ann. d'ocul.*, 1926, 163, 673-683.—The lateral displacement of spectacle lenses gives an optical effect equivalent to that of triangular prisms. If one looks at a vertical straight line through a prism whose edge is parallel to the line, the line will appear curved, its concavity directed toward the edge of the prism. If, now, one places a prism before each eye, each prism with its edge directed toward the nasal side, the line, which would be concave toward the right with the left eye alone, and concave toward the left with the right eye alone, is seen binocularly as curved antero-posteriorly, its center bulged out toward the observer, due to the stereoscopic effect of fusion of the two disparate images. This same effect is the result of temporal displacement of convex spherical lenses; nasal displacement gives the opposite effect. A plane surface, under these conditions, becomes bulged out dome-fashion, or hollowed out like a basin, with the center of deviation at the point of fixation.—*E. G. Wever* (California).

17. French, J. W. *Stereoscopy restated.* *Amer. J. Physiol. Opt.*, 1926, 7, 250-302.—From experimental evidence, the author finds that stereoscopy breaks down under certain conditions, which are: For certain pairs of objects, whether in the same or different horizons, there are generally two extreme critical points beyond which stereoscopic vision breaks down. For certain pairs of objects in the same horizon there are two inner critical points. Objects of dissimilar form but approximately the same average angular dimensions can frequently be combined stereoscopically; thus a circle can be combined with a triangle if their average angular dimensions are about equal.—*S. W. Fernberger* (Pennsylvania).

18. Higginson, G. D. *The visual apprehension of movement under successive retinal excitations.* *Amer. J. Psychol.*, 1926, 37, 63-115.—Experimental results, obtained by presenting either simultaneously or successively two parallel or oblique white lines on a dark field, do not indicate a significant correlation between any one temporal interval and full movement. Clear and insistent visual movement may occur under phenomenal simultaneity of both figures. It may also be produced by the immediate addition (without interval) of one member to another, by the sudden removal of one member, or in successive presentations with no interval between. The fundamental assumption of Wertheimer's physiological explanation, namely, that the *phi*-function requires a determined and specific temporal course, does not stand experimental test and must be abandoned. Certain visual movements do not lend themselves to a character-

ization in qualitative terms of vision. The significance of a visual grey of a certain durational course, alleged to be the psychological correlate of visual movement, appears to have been exaggerated. Non-visual resources are utilized to a great extent in the apprehension of movement under discrete retinal stimulation, which is a form of abstractive perception determined by stimulus, receptor and central organs, the degree of abstraction depending upon the availability of experiential items and upon the relative contributions of environment and of organic factors.—*G. J. Rich* (Institute for Juvenile Research).

19. **Moreau, —** *Etat de la vision d'un aveugle-né, onze ans après sa guérison*. (The visual condition of a congenitally blind individual eleven years after recovery.) *Ann. d'ocul.*, 1926, **163**, 683–687.—A child of eight years, completely blind from birth because of double cataract, showed after an operation which was surgically successful, first the perception of brightness, then color, and finally, after several months of visual education, the recognition of objects and letters. But after the cessation of training the last-named capacity soon retrogressed, and eleven years later he showed very limited visual perception, designating an object only in terms of brightness or color. This indicates that in a case of congenital blindness the cerebral centers for vision are not normally developed, and though proper education may do much to improve the visual sense, this capacity will always remain in a primitive state.—*E. G. Wever* (California).

20. **Travis, L. E.** *Changes in auditory acuity during the performance of certain mental tasks*. *Amer. J. Psychol.*, 1926, **37**, 139–142.—Attention to the solution of mathematical problems, memorization of poetry or reading of prose decreases the stimulus limen for a tone of constant pitch. The increase in sensory acuity appears to be indicative of ability to become completely lost in the operation. Attention increases sensory intensity, but it does not need to be attention focused directly upon the sensory field in question. There is, in attention, a process of reciprocal innervation which spreads to all sensory fields and thereby causes generalized heightened acuity.—*G. J. Rich* (Institute for Juvenile Research).

21. **Troland, L. T.** *Psychology of natural color motion pictures*. *Amer. J. Physiol. Opt.*, 1926, **7**, 375–382.—The following observations are made from a study of the so-called two-color process of naturally colored motion pictures. Orange-red and a slightly bluish green are used. These are best seen in combination under artificial illumination. In consciousness many colors are perceived which are not physically present. This seems to be due largely to the "memory color" phenomena described by Hering and more recently by Jaensch. Certain interesting factors leading to a breakdown of this phenomenon are discussed. The colored pictures also enhance the depth effects. Such pictures produce less eye strain than either the old-colored pictures or the usual black and white pictures.—*S. W. Fernberger* (Pennsylvania).

22. **van Heuven, J. A.** *A method for measuring simultaneous contrast*. *Brit. J. Psychol. (Gen. Sect.)*, 1926, **17**, 127–141.—The phenomenon studied is the mutual influence, in perception, of two areas unequally illuminated. A Zeiss epidiascope with a perforated lamina was used to project two clearly or vaguely defined squares of white light on a neutral dark background. These squares, when touching at one angle so that the diagonals lie in each other's projection, become confluent, and the more so as the outlines are made hazier by vague focusing. Starting from these phenomena, the author devises a measure of such "irradiation phenomena." The dimensions of the lighted areas, even when hazy, may be secured with high accuracy by geometric methods, and are corroborated by photographs in the face of opposed subjective estimates. By bringing the two lighted squares just in touch with each other while hazily adjusted, and then focusing sharply, an area may be demonstrated that is in the

former case white and in the latter dark. The width of this area furnishes a measure of the subjective dimensions of the squares; and by comparing this with the previously ascertained objective dimensions the required measure of irradiation is obtained. Further experiments on simultaneous contrast by the use of this method are promised.—*R. R. Willoughby* (Clark).

23. **Young, R. C.** Binaural vs. monaural sensibility of the human ear to small differences in frequency. *Amer. J. Psychol.*, 1926, 37, 313-329.—At 1,600 d.v., the pitch sensibility for tones produced by vacuum tube oscillator and telephone receiver is approximately the same for the right and the left ear, but is appreciably greater for the two ears used together. This characteristic difference holds as the intensity of the note is increased. The pitch sensibility at a constant level of loudness, one hundred times that of the threshold amplitude, is approximately the same for the right and the left ear, but is greater for the two ears functioning together. This characteristic difference holds throughout the range from 64 d.v. to 8,000 d.v. Within this range, the DL increases with increase in frequency, while the relative DL decreases to a minimum at 1,024 d.v. and then increases.—*G. J. Rich* (Institute for Juvenile Research).

24. **Zigler, M. J., & Northup, K. M.** The tactual perception of form. *Amer. J. Psychol.*, 1926, 37, 391-397.—Tactual form, produced by cardboard forms applied to the forearm with vision excluded, is not so definitely and unfailingly apprehended as tactual pressure. The latter is invariably perceived, while tactual form is not definitely given in a considerable percentage of cases and is not apprehended at all in an appreciable number of instances. The realization of form is minimal in case of pressure totally devoid of outline; and maximal where the completed contour of a figure-form is given at all points in terms of the tactual impression. Between these extremes are intermediate degrees of definiteness of form, where salient topographical features of the tactual impression are perceived in isolation and completed either in visual or in tactual imagery or in both. On the forearm, the stimuli of common geometrical figures must have a main dimension of 12-15 mm. to give rise readily to a tactual impression of determinable shape.—*G. J. Rich* (Institute for Juvenile Research).

[See also abstracts 41, 51, 53, 54, 78, 86, 141.]

FEELING AND EMOTION

25. **Cleeton, G. U.** Estimating human character. *Scient. Mo.*, 1926, 23, 427-431.—Antecedents of character reading methods are found in Hippocrates, Juan Huarte, Johann Kaspar Lavater, and Gall. 40 students were used as subjects in an experimental study by Cleeton and Knight. They were rated on various character traits by (a) fraternity associates, (b) strangers accustomed to employing men, and (c) by head and face measurements taken with anthropometric instruments and interpreted by the commercialized systems of analysis. The ratings by (a) agreed with each other closely; those by (b) also agreed with each other closely; but those by (a) did not agree with those by (b); and those by (c) neither agreed with each other nor agreed with (a) or (b).—*J. F. Dashiell* (North Carolina).

26. **Dorcus, R. M.** Color preferences and color associations. *Ped. Sem.*, 1926, 33, 399-434.—A survey of the literature on this topic is followed by an experimental study by a well controlled paired comparison method, with unequally and equally saturated Munsell colors, upon college students, psychopaths, inmates of homes for the aged, and children of eight, nine, and ten years. Of the many conclusions a few follow: Saturation and brightness are not nearly of the importance of hue in determining preferences. The above-mentioned groups

do not differ widely in their orders of choice. On a second presentation a very high number of reversals of choice appears. In interpreting results of this kind of study more attention should be given to the question, Which colors are chosen in preference to which other colors?—*J. F. Dashiell* (North Carolina).

27. **Guilford, J. P.** **An attempted study of emotional tendencies in criminals.** *J. of Abn. & Soc. Psychol.*, 1926, 21, 240-244.—An attempt was made to compare the emotional tendencies in criminals with those of normal individuals by means of the Pressey X-O tests given to 100 inmates of the Nebraska State Reformatory for Men. From the results it was concluded that prison inmates are as much affected by unpleasant word stimuli as are normal people and perhaps more so, especially by those carrying a meaning of fear or reference to self that is menacing or disparaging. There is some evidence for a lack of association of ideas as compared with the normal, and some tendency to give peculiar associative responses. Criminals differ from the normal in the particular acts which they consider blameworthy, while putting roughly the same number of acts in that category. They are slightly less subject to worries, or at least to confess them. Some of these traits may have resulted from prison and court experiences.—*E. N. Brush* (Boston Psychopathic).

28. **Kambouropoulou, P.** **Individual differences in the sense of humor.** *Amer. J. Psychol.*, 1926, 37, 268-278.—The types of humor exhibited by different persons, that is, the types of situation at which they laughed, were studied by means of humor diaries and by the method of ranking jokes. A fair degree of consistency was found with respect to the types of humor. These types are primarily the personal and the impersonal. The former can be subdivided into passive personal and active personal; the latter into the perception of incongruity in situations and the perception of incongruity in ideas, or the perception of nonsense. The personal and the impersonal types of humor need to be experimentally related to temperament and character before the sense of humor can be further analysed.—*G. J. Rich* (Institute for Juvenile Research).

29. **Rich, G. J.** **Dr. Marston on deception types.** *Amer. J. Psychol.*, 1926, 37, 307-309.—Deception exists as a psychological category only in so far as it involves a typical emotional and motor attitude or "consciousness" which accompanies increased reaction times. Additional mental work appears to be a component of the deceptive attitude. The distinction between positive and negative types of reaction in deception is valueless, since any complication of conditions which leads to conflicting impulses makes all persons react more slowly when deceiving.—*G. J. Rich* (Institute for Juvenile Research).

30. **Syz, H. C.** **Observations on the unreliability of subjective reports of emotional reactions.** *Brit. J. Psychol. (Gen. Sect.)*, 1926, 17, 119-126.—The records of a previous psychogalvanic experiment upon 64 medical students were reexamined with a view to locating discrepancies between deflection and introspective report of the emotional experience. Fifty stimulus words indicative of a variety of life situations were used. Reactions were most frequent (84%) to the individual's name. Next in frequency were the responses to sex topics and school interests. Reactions to a repeated reading were about half as frequent as to the first. No subject reported more than 37% of his reactions; however, there are reports of emotional responses to many words where no deflection was registered. These cases were found to have a relationship with the topic. The most striking cases were: (1) Words traditionally associated with emotional responses, such as *mother, father, ambitious*. These gave a high frequency of "false" reports (i.e., unaccompanied by deflection). (2) Words the suppression of emotional reactions to which is traditionally demanded by the social environment, e.g., *childish, lazy*, and, markedly, sex topics. These yield a low frequency for all reports, true and false. On the basis of these findings it is pointed out

(1) that psychogalvanic investigations have the serious defect of not differentiating between emotions; and (2) that a social factor keeps some emotional responses from awareness and leads to belief in others which are non-existent. A bibliography of eight titles is included.—*E. R. Willoughby* (Clark).

31. **Uhrbrock, R. S.** *Personal estimates of character traits.* *Ped. Sem.*, 1926, **33**, 491-496.—Freshmen of the University of Wyoming were asked to rate themselves by checking the list of character traits of the Downey Will-Temperament Test. There seemed to be a general tendency to check the more admirable traits. Tables for the frequencies for both men and women are furnished. In a comparison of self-ratings on intelligence with objective measurements of it, possession of higher intelligence seemed to enable raters to judge themselves more accurately than in the case of lower degrees.—*J. F. Dashiell* (North Carolina).

32. **Verwoerd, H. F.** *A method for the experimental production of emotions.* *Amer. J. Psychol.*, 1926, **37**, 357-371.—Colors are presented in rapid succession and in different series and combinations to an observer who has to perform given reaction tasks in connection with them. The observer's success or failure in the performance of a specific task is (unknown to the observer) determined by the experimenter, who causes this to take place under varying conditions. The success or failure under a given condition becomes the causal antecedent for a particular emotion to arise. Satisfaction is produced by causing the observer to react correctly under conditions which create in him the impression that his correct reaction is a praiseworthy achievement; shame and disappointment by causing him to make silly mistakes; delight and exaltation by allowing him to avoid the latter; fear and relief by making him expect a painful shock with certain stimuli, but not always giving it; compassion, embarrassment and joy by having him punish the experimenter for his own mistakes; and shame by forcing him to make mistakes which appear to be easily avoidable. The method makes it possible for emotional processes to be produced as desired under definite conditions where they may be observed; yet the total situation is simple and natural.—*G. J. Rich* (Institute for Juvenile Research).

33. **Washburn, M. F., Booth, M. E., Stocker, S., & Glicksmann, E.** *A comparison of directed and free recalls of pleasant and unpleasant experiences, as tests of cheerful and depressed temperaments.* *Amer. J. Psychol.*, 1926, **37**, 278-280.—Both the method of directed recall of affective experiences and the method of free recall appear to be of value in the diagnosis of cheerful and depressed temperaments. Both methods gave positive results when used on the same group of subjects.—*G. J. Rich* (Institute for Juvenile Research).

34. **Washburn, M. F., Rowley, J., & Winter, G.** *A further study of revived emotions as related to emotional and calm temperaments.* *Amer. J. Psychol.*, 1926, **37**, 280-283.—Emotional persons do not tend to recall emotions from more recent date than do those rated as calm. The intensity of the recalled emotions, introspectively reported, is related to the degree of the subject's emotionality. The amount of deflection of a galvanometer attached to the subject's hands correlates with both the degree of emotionality of the subject and the intensity of the revived emotion as introspectively reported. There is only a slight tendency for the more emotional individuals to recall a greater number of emotionally toned incidents than do the calm ones. When tested by the Downey Group Will-Temperament Test, the calm subjects show on the whole greater motor impulsion, less suggestibility or compliance, less interest in detail and poorer motor coordination than do the emotional subjects. There is some tendency for them to be slower in movement and to show less flexibility.—*G. J. Rich* (Institute for Juvenile Research).

[See also abstracts 40, 42, 58, 59, 134, 141.]

ATTENTION, MEMORY AND THOUGHT

35. Bichowsky, F. R. The mechanism of consciousness: Images. *Amer. J. Psychol.*, 1926, 37, 557-564.—The existence of images as distinct from percepts is one of the most patent of introspective facts. Apart from differences of relation, they differ from one another with respect to intensity, vividness, subjectivity, privacy, voluntariness, and universality. Images may be thought of as the activity of a new conscious level, an activity stimulated by percept activity and partly controlling, in its turn, the activity of that lower level, exactly as activity of the percept are may be stimulated by activity in the level of pre-sensation and in its turn may partly control the activity of that level.—G. J. Rich (Institute for Juvenile Research).

36. Cason, H. Specific serial learning; a study of backward association. *J. Exper. Psychol.*, 1926, 9, 195-227.—The present experiment was devised to test the assumption that, when associations in a series are formed in the forward direction, certain remote associations are also made which reduce the amount of learning required to form associations of the same material in the backward direction. In the first part of the experiment the observers worked with nonsense syllables and short familiar words. In the second part the observers learned a logical prose passage. "It is apparently impossible to limit the learning processes to the formation of associations in the forward direction when rote material is used. The various fluctuations and irregularities which occur in the learning process support the belief that when a series is being learned to all appearances in the forward direction, some *practice* is also taking place in the backward direction. . . . It was found that the learning of logical material, instead of establishing backward associations, actually forms inhibiting associations which interfere with the later learning of the same items in the reverse order."—C. C. Pratt (Harvard).

37. Cleeton, G. U. Originality. *J. of Abn. & Soc. Psychol.*, 1926, 21, 304-315.—The article is a summary of the experimental literature and thinking related to the trait *originality*. There has been no adequate description in psychological terms of trait names such as originality. As a trait name, the latter seems to be closely associated with such traits as *independence*, *constructive imagination*, *resourcefulness*, *initiative* and *ingenuity*. Of the various methods suggested for rating originality, those requiring examination of the individual in relation to lists of trait activities seem to offer most promise. Originality seems to be considered essential to persons in executive and managerial positions. Initiative and resourcefulness are more often required for success, in the opinion of most of the sources consulted, than is originality. Reliability coefficients for ratings on the trait originality are rather unfavorable when compared with reliability coefficients of ratings on more objective traits. Originality is more frequently considered to be related to intellectual traits than social traits. The emotional aspects of originality as a trait have been neglected. Chassell suggests a number of tests which offer promise as devices for measuring originality, and although her methods of determining merit and reliabilities are open to question, her results are highly suggestive of future possibilities. A bibliography is appended.—E. N. Brush (Boston Psychopathic).

38. Garrett, H. E., & Hartman, G. W. An experiment on backward association in learning. *Amer. J. Psychol.*, 1926, 37, 241-246.—Series of 12 nonsense syllables were learned to complete mastery and then relearned either in the same order, in the reverse order or with every pair of syllables reversed in order. Series in all of these arrangements were learned by the "continuous" method in which the entire list was presented simultaneously, as well as by the "discrete" method in which the single syllables were presented stepwise. The results show

the greatest saving upon relearning the same series, less upon relearning the syllables in the backward order, and still less when the order of every pair of syllables is reversed. No significant difference appears between the two methods of learning. The existence of backward associations as found by Ebbinghaus is confirmed, but no definite conclusions can be drawn as to the mechanism involved.—*G. J. Rich* (Institute for Juvenile Research).

39. *Gill, N. F., & Dallenbach, K. M.* A preliminary study of the range of attention. *Amer. J. Psychol.*, 1926, 37, 247-256.—Geometrical forms were exposed tachistoscopically and the observers required to report whether the impressions were upon one or upon more than one level of clearness, but not to report upon the number of figures presented. The results show that the range of attributive attention greatly exceeds the limits traditionally set for it, being from 17 to 42 stimulus objects under the conditions of this experiment. Size and form are objectively effective in determining the range; position and pattern are not. Grouping depends more on the subjective disposition of the observer than upon the objective arrangement. Finally, the law of the two levels of attention is again confirmed—the processes of every consciousness are divided into the clear and the unclear.—*G. J. Rich* (Institute of Juvenile Research).

40. *Jarden, E., & Fernberger, S. W.* The effect of suggestion on the judgment of facial expression of emotion. *Amer. J. Psychol.*, 1926, 37, 565-570.—Suggestion, such as the naming of the emotion and the analysis of the face, increases to a considerable extent the percentage of correct recognitions of the faces of the Piderit Model. The amount of increase is progressive with increasing suggestion in those faces (Anger and Dismay) not readily recognized. Neither of these faces seems, even under the conditions of the greatest possible amount of suggestion, to be recognized sufficiently often to make its use for demonstration purposes advisable.—*G. J. Rich* (Institute for Juvenile Research).

41. *Koch, H. L., & Ufkess, J.* A comparative study of stylus maze learning by blind and seeing subjects. *J. Exper. Psychol.*, 1926, 9, 118-131.—This study was undertaken to determine whether the blind are more successful in maze-learning than are those with normal vision. One might suppose *a priori* that the reliance which the blind place on tactual-kinaesthetic experience would enable them to cope easily with the difficulties presented by the maze. "Blind subjects tend to be less successful, on the average, in maze-learning of the stylus variety than are normal subjects. The error criterion of skill in maze performance differentiates the two visual groups more markedly than does either the trial or time criterion. Some visual experience before the onset of blindness seems to reduce materially the handicap which the blind as a group appear to suffer. The intelligence of the subject, whether he is with or without defective vision, determines, in part, the ease with which he masters the maze."—*C. C. Pratt* (Harvard).

42. *Lund, F. H.* The criteria of confidence. *Amer. J. Psychol.*, 1926, 37, 372-381.—Experimental work with nonsense syllables shows that not only is recognition attended by a given degree of confidence, but that this degree is dependent upon the number of letters in the recognized syllable which occurred in the syllable previously seen. The degree of similarity which a present situation has with a previous situation, and therefore the degree of similarity which present perceptual and associative reactions have with previous ones, determines the degree of confidence. The ability of a present event to arouse reactions which carry with them the sense of having been experienced before, the ease with which present stimuli reintegrate a familiar pattern response, and the combined effect of elementary reactions afforded by a situation on the nature of the perceptual reactions to them as a group, are the determining factors or criteria of confidence.—*G. J. Rich* (Institute for Juvenile Research).

43. **McGeoch, J. A., & Whitely, P. L.** The recall of observed material. *J. Educ. Psychol.*, 1926, 17, 419-425.—The purpose of the investigation was to measure the recall of briefly observed material after 30, 60, 90, and 120 days. The material observed was Binet's Card of Objects. Four groups of college sophomores recalled in the form of answers to fifty questions and four groups in the form of a written narrative. Each group wrote an immediate and a delayed recall after intervals of 30, 60, 90, and 120 days. Each group recalls but twice, the initial recall and once again after either 30, 60, 90, or 120 days. Percentage delayed recall is of immediate recall (narrative method): after 30 days, 88.8; after 60 days, 73.0; after 90 days, 60.1; after 120 days, 54.7. When measurement is made by the answers to an interrogatory the curve of retention falls very slowly, being only 12.2 per cent forgotten after 90 days. Forgetting is much greater when measured by narrative reproduction than it is when measured by answers to an interrogatory.—*A. M. Jordan* (North Carolina).

44. **Pal, G.** Influence of the reproducing process in memorization. *Indian J. Psychol.*, 1926, 1, 39-44.—The study attempts to show that the effort of reproduction is a determinant of memory in the same sense as the presentative factor. The materials for memorization consisted of 15 nonsense syllables. In the first series, recall was made after each presentation until memorization was complete. In each subsequent series the number of attempted reproductions was gradually diminished. Five subjects were employed. Auditory presentations were used. The results show that the number of repetitions necessary for complete learning increases with the reduction of the number of attempted reproductions. Individual differences in the rate of increase in the number of repetitions is evident and is fairly constant for the individual subjects.—*S. W. Fernberger* (Pennsylvania).

45. **Peterson, J.** Limits of learning by trial and error. *J. Exper. Psychol.*, 1926, 9, 45-55.—In the present experiment the subjects were required to associate a given number with each letter of the alphabet. An examination of the curves of learning and the behavior of the subjects during the process of learning makes it clear that the rational and higher forms of learning have random processes similar in most respects to those in the usual trial-and-error type. "Learning seems to be fundamentally a smoothing out of conflicts among incompatible impulses aroused by a complexity of external circumstances or stimuli, so that the organism can act in a somewhat unitary or consistent manner toward them."—*C. C. Pratt* (Harvard).

46. **Robinson, E. S., & Brown, M. A.** Effect of serial position on memorization. *Amer. J. Psychol.*, 1926, 37, 538-552.—Experiments with series of nonsense syllables and of numbers, in which the method of prompting was used, show that the advantages of both primacy and finality are pronounced; and primacy shows an even greater advantage than finality. The effect of primacy extends in some degree over several items in the first portion of a list, while the finality effect is more limited in scope. Curves of memorization have been constructed for the several items, which are like most other curves of learning in their general negative acceleration. The sharpness of deceleration varies according to the serial position of the item in question. The more favorably situated items show a sharper deceleration and there is evidence of early positive acceleration in the case of items which are unfavorably situated in very long lists.—*G. J. Rich* (Institute for Juvenile Research).

47. **Warden, C. J.** The factor of movement in the presentation of rote memory material. *Amer. J. Psychol.*, 1926, 37, 257-260.—Letters, digits and simple geometrical designs are learned slightly better upon a single presentation when one stimulus object is first displayed alone and the others added to it than when all are presented simultaneously. In the case of geometrical designs, a

still greater amount is learned when the designs are painted, in view of the observer, on the back of an exposed glass. When the factor of movement is brought into the stimulus situation, the stimulation is more efficient so far as immediate reproduction is concerned.—*G. J. Rich* (Institute for Juvenile Research).

48. **Wylie, M.** **Recognition of Chinese symbols.** *Amer. J. Psychol.* 1926, 37, 224–232.—Chinese symbols offer good material for psychological work. Recognition is better with Chinese symbols alone than when the symbols and their English equivalents are used together, probably because there is a sacrifice of attention to the symbol in observing the word and because efforts were made to associate symbol and word in a period too short to permit such association. Ability to know what is not seen exceeds ability to recognize the old. Ability to recognize appears to follow Ebbinghaus' curve of forgetting.—*G. J. Rich* (Institute for Juvenile Research).

[See also abstracts 20, 33, 34, 60, 132, 167, 177, 187.]

NERVOUS SYSTEM

49. **Field, H., & Brücke, E. Th.** **Über die Dauer des Refractürstadiums des Nerven bei Ermüdung und Erholung.** (On the length of the refractory phase of nerve during fatigue and recuperation.) *Pflüg. Archiv f. d. ges. Physiol.*, 1926, 214, 1–20.—The refractory phase of a fresh preparation of frog nerve, studied by the method of superposed frequencies of stimulation (34 and 35 per sec.) was found to have a minimum length of about 1 σ . As fatigue developed with continued stimulation the refractory phase increased to about 9 σ , after 10 minutes. With rest or decreased frequency of stimulation the refractory phase was shortened again, returning to its original value after some 10 minutes of uninterrupted recuperation. The significance of these phenomena for the facts of central inhibition and as a criterion of fatigue below amounts noticeably affecting the action current is suggested.—*L. T. Spencer* (Yale).

50. **Herrick, C. J.** **Brains of rats and men.** Chicago: University of Chicago Press, 1926. Pp. xiii + 382.—C. Judson Herrick in this new book on the origin and biological significance of the cerebral cortex, traces the evolution of this amazingly complex organ from fishes to men, and follows step by step the elaboration of its function. Objective behavior and subjective experience are formulated in biological terms. The author attempts to show that mind or consciousness as introspectively experienced is a natural phenomenon which cannot be neglected in the total view of human behavior. It must, therefore, be examined by the usual method of natural science and articulated in some organic way with the vital processes in their entirety; granted that "the evidence is biologically adequate that mind (awareness) as we know it phenomenally is a function of a particular configuration of bodily organs." Beginning with the simplest structures prophetic of cerebral cortex, Dr. Herrick traces the development of mental functions through to its culmination in man. He centers his discussion about the brains of rats and men, the two species of mammals whose behavior patterns have been studied most intensively under conditions of laboratory control. The author raises serious objections to a sort of behaviorism which is not interested in the study of consciousness, asserting that consciousness is no more a non-physical entity than is muscular contraction or any other bodily function. He finds in man all the physiological functions of his animal ancestors—and many more. Man's preparation for future living, consciously, deliberately, purposefully planned, by well-chosen discipline, is a thing which apparently the rat cannot do. Consequently, "men are bigger and better than rats."—*P. H. Ewert* (Clark).

51. Lyon, E. P. Talks on physiological optics. 1. General physiology of the senses. *Amer. J. Physiol. Opt.*, 1926, 7, 323-338.—The first lecture of an outline of a course in physiological optics given at the Medical School of the University of Minnesota. Each point in space in front of us is associated with a certain nerve ending in the retina. And, in the case of the area of distinct vision, each nerve ending has its own fiber pathway to a particular part of the brain. In the periphery of the retina, several endings are attached to a single nerve fiber. Thus spatial localization is accomplished. "The dioptric apparatus together with the definite arrangement of nerve endings and fiber pathways in the nervous system constitute the mechanical basis for the vision of separate objects and the recognition of their arrangement in space."—S. W. Fernberger (Pennsylvania).

52. Meyers, I. L. Bladder disturbances in lesions of the nervous system. *J. Nerv. & Ment. Dis.*, 1926, 64, 321-330.—This article is a discussion of bladder affections due to lesions of the spinal cord. When the lesion is above the conus and the fiber tracts which form the vesical pathway to and from the cerebrum are destroyed, then occurs retention of urine or its minor manifestations. This also occurs in lesions of the conus or of the cauda equina when the lesion involves the posterior horns or posterior roots but not the motor nuclei or the anterior roots of the internal pudic, in which case there is no flaccid paralysis of the musculature of the perineum. When lesions of the conus or cauda equina include involvement of motor nuclei of the internal pudic or its anterior roots and a flaccid paralysis of the muscles of the perineum, there may be passive incontinence. Retention or incontinence of urine is generally one of the earliest manifestations of tabes dorsalis. Retention is the result of failure of the expulsive power of the bladder owing to the paralysis of the pelvic autonomic nervous system and the detrusor muscle. In complete transverse lesion of the cord as well as in tabes dorsalis it may be assumed that the sympathetic nervous system of the bladder is paralysed simultaneously with the pelvic autonomic nervous system and does not function independently of the cord by virtue of its ganglia in the mesenteric plexus. (A short bibliography follows.)—C. P. Armstrong (Boston Psychopathic).

53. Putnam, T. J. Studies on the central visual system. II. A comparative study of the form of the geniculo-striate visual system of mammals. *Arch. Neur. & Psychiat.*, 1926, 16, 285-300.—The specimens studied for this investigation were the mammalian brains in the collection of the Central Institute For Brain Research of Amsterdam. The results are summarized as follows: "1. The primitive mammalian type of corpus geniculatum externum, with a dorsal and ventral nucleus, without lamination, lying vertically on the surface of the brain stem is seen in marsupials and lower mammals. 2. Only the dorsal nucleus has a projection on the cortex. An indication of this is seen in the brain of the didelph. 3. Of the animals studied, the *Cetacea*, *Carnivora* and primates showed a variation from the primitive mammalian type of corpus geniculatum. This consists of the almost complete disappearance of the ventral nucleus; the appearance of one or two rows of large cells along the periphery of the persisting dorsal nucleus; certain deformations of the primitive form, perhaps resulting from an increase in the size of the area of representation of binocular and macular vision; and a rotation lateralward so that the original external surface lies ventrally. The point at which the blood vessels enter the hilus in primates perhaps represents the external surface in lower mammals. 4. In all the animals studied, the fasciculus longitudinalis inferior appeared to be the only system connecting the external geniculate body with the cortex. Its coarse fibers may be seen in the geniculate body. In some animals (*Phoca*, *Phocaena*) the entire fasciculus can be unmistakably traced to it. The fibers may be traced into the cortex in many

specimens. 5. With the other reasons for believing that the inferior longitudinal fasciculus is the geniculo-striate radiation should be considered that its fibers resemble those of the optic tract, and also other important radiations. Such coarse fibers are not seen in association systems. 6. In the ape, fibers are given off only from the superior and inferior edges of the longitudinal fasciculus and simultaneously to the lateral and mesial cortex. This speaks in favor of the 'vertical division' of the optic radiation. The fibers follow a 'bayonet' course to the cortex. 7. No evidence of decussating cortical fibers has been found in the present study."—*E. Beckwith* (Boston Psychopathic).

54. **Putnam, T. J.** **Studies on the central visual connections. III. The general relationship between the external geniculate body, optic radiation and visual cortex in man. Report of two cases.** *Arch. Neur. & Psychiat.*, 1926, **16**, 566-596.—The observations presented are closely in accord with the theories of Wilbrand of Lenz, which may be regarded as an extension of Henschen's theory. The conclusions drawn are: (1) It appears to be possible to construct a scheme of the projection of the retina in the central visual system on a purely anatomic basis, without reliance on perimetry. (2) The fasciculus longitudinalis inferior of the occipital lobe contains all of the geniculo-striate projection fibers, and no others. (3) The projection of the retinal quadrants and macula in the central portion of the visual system is constant. The upper retinal quadrant is projected on the mesial limb of the corpus geniculatum, the upper portion of the fasciculus longitudinalis inferior and the upper anterior portion of the striate cortex. The lower quadrant lies laterally in the corpus geniculatum, inferiorly in the radiation and cortex. The macula is represented between them in the upper portion of the posterior half of the corpus geniculatum, and posteriorly in the striate cortex, where its representation is extensive. (4) There appears to be no theoretical necessity for callosal visual fibers and no satisfactory anatomic evidence of their existence.—*I. Rappoport* (Boston Psychopathic).

55. **Sicard, J. A., & Forestier, J.** **Roentgenologic exploration of the central nervous system with iodized oil (lipiodol).** *Arch. Neur. & Psychiat.*, 1926, **16**, 420-434.—The comparatively harmless effect of lipiodol in the cerebrospinal fluid and its value for the exploration of the cavities of the skull and spine were demonstrated over a period of four years observation. The article reports the actual technic of administering the injection and the interpretation of results and contains pictures of normal and abnormal conditions in the exploration of the epidural space, the spinal subarachnoid space and the cerebral ventricles. "As a conclusion we may say that for ventricular exploration the injection of lipiodol has not given such good results as the injection of air. The contrary is true for the spinal spaces."—*E. Beckwith* (Boston Psychopathic).

56. **Tiegs, O. W.** **On the inadequacy of the conception of the neurone as the unit of conduction of the nervous system.** *Austral. J. Exp. Biol. & Med. Sci.*, 1926, **3**, 45-68.—The author endeavors to show that the nerve fibre is capable of transmitting several impulses simultaneously, and tries to establish the following points: (1) The afferent neurone from a peripheral receptive cell responds by graded activity to graded strength of excitation of the receptor; and this graded activity of the afferent neurone is manifested, not by gradation in the frequency with which impulses pass along it, but by a gradation in the size of the disturbances propagated. (2) Since the physical process of conduction is one of "all-or-none" intensity, a gradation in the size of the disturbance propagated must have as its basis the excitation of a graded number of conducting paths within each neurone. (3) It is highly probable that the neurofibrils are the actual conducting paths, rather than axons and dendrites. The varying intensity of auditory sensations is given as an example of a situation where the differences must depend upon a graded intensity of stimulations in each neurone.

In this case there must be different conducting paths within each neurone, i.e., the neurofibrils must be the conducting paths. The existence of synapses in the cord is also questioned, the author having found fine fibrils arising as collaterals from the white matter of the cord, pervading the whole of the gray matter, entering the dendrites of the nerve cells without the formation of discontinuous synapses, and anastomosing about the nuclei of the neurones. From this anastomosing system he finds a relatively small number of neurofibrils arising and entering the axon. The author bases his deductions regarding the structure and function of neurofibrils upon his own histological work.—*J. R. Liggett* (Clark).

[See also abstracts 15, 66, 75, 77, 112, 118, 124.]

MOTOR PHENOMENA AND ACTION

57. **Aronovitch, G.** On the nature of the cremasteric reflex. *J. Nerv. & Ment. Dis.*, 1926, **64**, 235-240.—The author points out that the cremasteric reflex is of greater phylo- and ontogenetic antiquity than the abdominal reflex and is often present when through lesion of the pyramidal tract the abdominal reflex is lost. The explanation of such clinical facts from the bio-evolutionary point of view emphasizes the possibility of applying the evolutionary theory for explaining clinical symptoms.—*C. P. Armstrong* (Boston Psychopathic).

58. **Gopalaswami, M. V.** The psycho-galvanic reflex phenomenon in monkeys. *Psychol. Stud. Univ. Mysore*, 1926, **1**, 49-56.—These experiments were devised to shed light on the hypothesis that the psycho-galvanic reflex is a measure, primarily, of the inhibitive control over the expression of emotional excitement. It is assumed that the monkey is, compared with man, deficient in inhibitive control, and therefore should show the decreased reflex characteristic of human defectives, possibly in greater degree. No comparative data, however, are given in the article, which is the record of various emotional stimuli and responses applied to and elicited from a monkey, with the accompanying record of fluctuations in the reflex. The findings indicate that the higher reflexes are likely to be associated with the inhibition of an impulse, most markedly perhaps through conflict with opposing impulses. It is suggested that this implies an inverse association between subjective emotion and the free expression of impulses. Extracts from the cinematographic record accompany the article.—*R. R. Willoughby* (Clark).

59. **Gopalaswami, M. V.** The genesis of the laughter instinct. *Psychol. Stud. Univ. Mysore*, 1926, **1**, 1-25.—A critical examination and suggested modification of MacDougall's theory that laughter constitutes a protection to the organism against excessive suffering in sympathy with the maladjustment observed to inhere in the laughter-provoking situation. The criticism proceeds by citing laughter situations to which it is difficult or impossible to apply the "antidote" hypothesis. The most general formula for the modification seems to be (the author is not wholly clear at this point) that laughter represents a discharge of energy left unexpressed by the checking, or failure of an object, of any mild conative tendency—provided the impulse to laugh be itself present in sufficient strength. Instances are cited, classified under the major impulses. Laughter is assigned a place in the scheme of impulses in the defence-mechanism group, along with flight, the cry of appeal or submission, and reduction or abolition of consciousness. The order in which these (together with the offense group—anger, etc.) are invoked is presented, with experimental evidence drawn from observations on the reactions of an infant to typical fear situations.—*R. R. Willoughby* (Clark).

60. Gopalaswami, M. V. A note on the correlation between the psychogalvanic reflex and "learning-effort." *Indian J. Psychol.*, 1926, 1, 35-38.—Mirror drawing is the learning task used with the psychogalvanic reflex. With increasing practice one obtains an increasing deflection of the galvanometer needle. One would expect less deflection with practice as, with greater facilitation, there should be less emotional excitement. But this is true only if the psychogalvanic reflex is considered an index of intensity of emotion only. The author believes that the results indicate that this is not true and that the psychogalvanic readings may be an indicator of increased learning effort.—S. W. Fernberger (Pennsylvania).

61. Jacobson, E. Response to a sudden unexpected stimulus. *J. Exper. Psychol.*, 1926, 9, 19-25.—The response to a sudden unexpected stimulus is conditioned not only by the nature of the stimulus itself, but also by the preceding general state of muscular tonus. When an individual is extremely relaxed a sudden loud stimulus causes little or no start and seems to lose its irritating character; while the same kind of stimulus, when an individual is in a state of muscular tenseness, will bring about a start and very considerable muscular contraction.—C. C. Pratt (Harvard).

62. Miller, M. Changes in the response to electric shock produced by varying muscular conditions. *J. Exper. Psychol.*, 1926, 9, 26-44.—In the present paper the writer reports the results of experiments on the effect of different kinds of muscular conditions upon the response to electric shocks. The subjects were trained in maintaining an extreme degree of muscular relaxation in order to compare this condition with the normal condition. "In general, the effect of relaxation was to reduce the extent of the movement, increase its reaction-time, and diminish the apparent intensity or unpleasantness of the stimulus. With relaxation there was a considerable proportion of cases where no movement appeared. These conditions held true whether the subject was asleep or awake under the relaxed condition; the differences were slightly more pronounced when he was asleep." The writer points out the similarity between phenomena of sleep in general and the results of the present experiments, and suggests that the theory that the raising of the threshold for reflexes and sensation in sleep is due to the shutting off of incoming sensory impulses might be applied equally well to the present phenomena.—C. C. Pratt (Harvard).

63. Morgan, L. T. Some characteristics of the work-curve with short working units. *Amer. J. Psychol.*, 1926, 37, 402-407.—The work-curves for continuous addition and for continuous cancellation, with scores for half-minute intervals, show a high initial output, a minimum point for the second half-minute, and a gradual fall from the third half-minute to the horizontal. The effects of fatigue seem to be confined to the first twelve minutes of work. The amount of depression of the curve during this period varies with the individual and with the task which produces the fatigue.—G. J. Rich (Institute for Juvenile Research).

64. Peak, H., & Boring, E. G. The factor of speed in intelligence. *J. Exper. Psychol.*, 1926, 9, 71-94.—From results secured from experiments with trained subjects in a psychological laboratory the authors conclude that *speed of reaction* is probably the most important factor in individual differences which appear in acts which involve "intelligence." There is a high correlation between score in an intelligence test, speed in an intelligence test, and speed in a simple reaction. There is a lower correlation if the time limits for the standard tests are greatly extended. In such cases the slower subjects overtake the faster ones since the latter have no opportunity to utilize their additional time. But in any case where time is at all important the "slow but accurate" subject has no advantage over his more rapid rival. If speed of reaction should turn out

to be the primary differentia in intelligent acts, one might consider "intelligence" as analogous to "power" in mechanics—i.e., amount of work done against time. A uniform relationship between speed of reaction and score on intelligence tests would also make it possible to test economically a fundamental and socially important individual difference. It would be important scientifically to know whether the locus of the individual differences in speed is not perhaps to be sought in the rate of conduction of the nervous impulse.—*C. C. Pratt* (Harvard).

65. **Rabaud, Et. Tropismes et comportement.** II. (Tropisms and behavior. II). *Rev. Phil.*, 1926, 51, 239–268.—The author advances a new theory of tropic action based on experimental evidence. A tropism is not identical with muscular tonus, as considered by Loeb, but is a separate process, a reflex (*reflexe clonique*) caused by contractions of the differentiated fibres of muscles. A tropism is always brief and unstable, whereas muscular tonus (*reflexe tonique*) due to contractions of undifferentiated fibres, is more or less stable and continuous. Rabaud does not claim that all behavior is tropic, but he believes that tropisms are the dominating factor in animal behavior.—*T. M. Abel* (Cornell).

66. **Rabiner, A., & Keschner, M. Theory of the mechanism for the Babinski toe phenomenon.** *Arch. Neur. & Psychiat.*, 1926, 16, 312–318.—In an attempt to explain the mechanism of the Babinski reflex, the authors present the theory that although dorsiflexion of the big toe is indicative of disturbance of pyramidal influences, it is also evidence of a preponderance of extra-pyramidal influences. In primates that have no pyramidal system, the normal position of the foot is dorsiflexion of the big toe and plantar flexion of the smaller toes. Along with the assumption of the erect posture, man developed the plantar flexion as the normal position of the toes. In order to maintain this adjustment the pyramidal and extrapyramidal systems must be well balanced. When the pyramidal system is disturbed, the preponderating influence of the extra-pyramidal system results in a reversion to a lower step in the mammalian scale, resulting in the original dorsiflexion of the big toe.—*E. Beckwith* (Boston Psychopathic).

67. **Tinker, M. A. The psychology of counting.** *Amer. J. Psychol.*, 1926, 37, 424–426.—Counting is in reality a reaction process. It is much easier to match a uniform series of units with verbal responses than an irregular series. It is easier to count stimuli presented at a medium rate than those presented at a very slow or very fast rate. Difficulty in counting accurately comes with lack of assurance that the matching is correct, and assurance consists of complete motor response.—*G. J. Rich* (Institute for Juvenile Research).

68. **Washburn, M. F. Gestalt psychology and motor psychology.** *Amer. J. Psychol.*, 1926, 37, 516–520.—The various discussions of the *Gestalt* psychologists fail to mention the factor that seems to play the leading rôle in the phenomena they so vividly describe: namely, the nature of the motor response. The conscious effect of a stimulus pattern is simple when the pattern is reacted to as a whole, complex when details are reacted to.—*G. J. Rich* (Institute for Juvenile Research).

[See also abstracts 29, 32, 41, 76, 128, 189, 191.]

PLANT AND ANIMAL BEHAVIOR

69. **Cameron, J. A. Regeneration in *Scutigera forceps*.** *J. Exper. Zool.*, 1926, 46, 169–179.—An experimental study of certain aspects of the behavior and regeneration of legs in the house centipede. The organism is able to regenerate a new, full-sized leg in six days at 25° C. The influence of temperature, degree of injury, and the effect of starvation on the moulting period and the rate of regeneration is also considered. This work is compared with the previous

work in regeneration in frogs, salamanders and related types.—*L. Carmichael* (Princeton).

70. *Caswell, G. Molgula citrina* (Alder & Hancock). Activities and structure of the free-swimming larva. *J. Morph.*, 1926, 42, 453-467.—The activities of the larva and the responses and orientations made to some external stimuli are noted. The structural organizations producing these activities are described in some detail.—*H. R. Laslett* (Whitman).

71. *Collins, H. H., & Adolph, E. F.* The regulation of skin-pattern in an amphibian, *Diemictylus*. *J. Morph.*, 1926, 42, 473-520.—The only efficient single factors in change in pigmentation in the integument of the vermilion-spotted newt were long subjection to low temperatures and the injection of pituitrin. Removal of the skin was followed by a rapid migration of dermal elements into the wounded area with differing responses for different pigmented areas. Auto-, homo-, and heterotransplants lost their pigment patterns to conform to the surrounding pattern.—*H. R. Laslett* (Whitman).

72. *Dawson, J. A.* The life-"cycle" of *Histrio complantus*. *J. Exper. Zool.*, 1926, 46, 345-353.—A study of the ability of protozoan protoplasm to maintain its division energy unimpaired in isolation pedigree cultures. The study was carried through 590 generations with no conjugation. A change in the division rate is noted, but evidence is given to show that death of the experimental organisms was due to environmental and not to intrinsic factors.—*L. Carmichael* (Princeton).

73. *Folger, H. T.* The effects of mechanical shock on locomotion in *Amoeba proteus*. *J. Morph.*, 1926, 42, 359-370.—*Amoeba proteus* responds to a mechanical shock by a cessation of movement. This period of quiescence is in direct proportion to the magnitude of the shock. The reaction time of the cessation reaction varies inversely with the magnitude of the shock. A series of reactions does not occur when the shocks follow in too rapid succession even though the early shocks are too slight to cause reactions. If the second shock of a series is sufficiently heavy, it will cause a response even though the recovery from the first shock is only partial at the time of stimulation.—*H. R. Laslett* (Whitman).

74. *Greenleaf, W. E.* The influence of volume of culture medium and cell proximity on the rate of reproduction of *Infusoria*. *J. Exper. Zool.*, 1926, 46, 143-167.—An experimental study of the relationship between culture medium and division rate of *Infusoria*. It appears that products of metabolism excreted by the organisms repress their rate of division. The description of materials and methods is of interest to students of the behavior of lower organisms.—*L. Carmichael* (Princeton).

75. *Higgins, G. M., & Sheard, C.* Effects of ultraviolet radiation on the early larval development of *Rana pipiens*. *J. Exper. Zool.*, 1926, 46, 333-343.—The experiments report the effect of ultraviolet radiation of known wave lengths upon the hatchability of ova and the early growth of the larva of *Rana pipiens*. Regions of the highest metabolic activity, such as the nervous system and the sense organs, responded to the greatest extent to radiation.—*L. Carmichael* (Princeton).

76. *Holden, F.* A study of the effect of starvation upon behavior by means of the obstruction method. *Comp. Psychol. Monog.*, 1926, 3, 17, 1-45.—The study attempts to measure the drive of starvation in the white rat in terms of objective behavior. The obstruction method was used, involving the principle of placing an obstruction of some sort between the animal to be tested and an incentive stimulus. Two main problems were attacked: first, the determination of the effects of systematic variation of the period of starvation upon drive behavior when a constant amount of electrical stimulation is employed in the obstruction section; and second, the relative effect of three different degrees of

electrical stimulation in the obstruction compartment upon the drive behavior resulting from a series of starvation periods. With respect to the first problem, it was found that the hunger drive appears to increase from 12 to 36 hours and to decrease with further increases in length of the starvation period. The hunger drive as indicated by the percentage of animals immediately conditioned, apparently reaches its maximum at 36 to 48 hours and remains fairly constant from this point to 72 hours. As measured by the number of crossings the results of the 24- and 48-hour drives appear to agree, while the 12- and 60-hour drives have highly similar values. In connection with the second problem it was found that only the lowest degree of electrical stimulation proved suitable for use with the method, and was found adequate for measurement of the hunger drive, in that it was high enough to bring out differentiation in drive behavior resulting from different periods of starvation and low enough not to arouse other conflicting tendencies. The number of contacts and jumps did not appear to bear any consistent relation to the length of the starvation period, the main conclusions being based upon the number of crossings.—C. J. Warden (Columbia).

77. Hopkins, A. E. On the physiology of the central nervous system in the starfish, *Asterias tenuispina*. *J. Exper. Zool.*, 1926, 46, 263-275.—The central nervous system of a starfish consists of a circumoral nerve ring from which a radial nerve is given off into each arm. This mechanism is the basis of the co-ordinated behavior of the organism. Isolated arms of the starfish, however, still show movement. Studies of such isolated arms seem to indicate that there is a directive function in the nerve ring. By appropriate stimulation, the coordination of the arms of the animal may be physiologically interfered with. Thus, functionally, two sets of arms result. These two sets of arms may pull against each other so that the organism is actually torn into two halves. It is probable that fission in the starfish is brought about in this manner.—L. Carmichael (Princeton).

78. Kuroda, R. Experimental researches upon the sense of hearing in lower vertebrates, including reptiles, amphibians, and fishes. *Comp. Psychol. Monog.*, 1926, 3, 16, 1-50.—The study attempts to throw some light on the development of audition in the evolutionary scale. The subjects used were 16 tortoises, 19 snakes, 35 lizards, 6 frogs, 6 newts, and 6 fishes. Two methods of approach were used—that of observing the effect of sound stimuli upon the respiratory movements and that of experimental histopathological investigations, with special reference to the physiological functions of the labyrinth. In connection with the first method, graphic kymographic records were taken with apparatus adapted for use with the various animals tested, bells being used as sound stimuli. He found no evidence of positive respiratory response of fishes to the sound of a bell. Auditory response in the strict sense of the term could be observed clearly in lizards and less obviously in frogs and toads. The second method consisted of observing whether any pathological changes might be found in the inner parts of the ear by applying continuous or explosive sound stimuli and killing and fixating the animals after the stimuli had been applied. The continuous sound stimuli were produced by a sounding box and consisted of three bells. The explosive stimuli were pistol shots, a noon gun or a noon whistle applied close to the animals. The method proved valid only when effective sounds were employed. Explosive sounds excelled any others in effectiveness. The suggestion is made that agitation of the labyrinth, brought about by vigorous sounds, attacks first of all the ganglion acusticus and then the papilla basilaris. In general Kuroda believes that only the lizards and adult frogs and toads, among the amphibia and reptiles tested, clearly possess the auditory sense.—C. J. Warden (Columbia).

79. Yagi, N. The cocooning behavior of a Saturnian caterpillar (*Dictyoploca japonica*:) a problem in analysis of insect conduct. *J. Exper. Zool.*, 1926, 46, 245-261.—An experimental study of the behavior of a caterpillar as shown in cocoon construction and in the formation of the so-called exit opening. The maxillary palpi are shown to be important in cocoon fabrication, for when they are present the meshes of silk coincide with the meshes of copper wire on which the cocoon is constructed, while the removal of these organs obliterates this regularity. The formation of the opening on the upper end of the cocoon is associated with the negative geotropism of the mature larva. By the reversal of the cocoon during spinning, the caterpillar's conduct was modified in five cases of which three were fatal to the insect. The exit hole serves its purpose only if the cocoon retains its position. The cocoon is provided with a stalk which assists in maintaining this original position. Nothing is observed in the behavior of the larvae which calls for any anthropomorphic interpretation.—L. Carmichael (Princeton).

[See also abstracts 53, 58, 65, 81, 84.]

EVOLUTION AND HEREDITY

80. Cummings, H. Epidermal ridge configurations in developmental defects. *Amer. J. Anat.*, 1926, 38, 89-150.—Apparently, only the ridge-forming capacity is an inherited fundament, the directions of the ridges being determined through ontogenetic factors. The change of ridge formation follows the change of structural shape of digits.—H. R. Laslett (Whitman).

81. Driver, E. C. The temperature-effective period—the key to eye facet number in *Drosophila*. *J. Exper. Zool.*, 1926, 46, 317-331.—Facet number in the compound eye of *Drosophila melanogaster* varies inversely with the temperature experienced during a limited period in larval life.—L. Carmichael (Princeton).

82. Eggen, J. B. The fallacy of eugenics. *Social Forces*, 1926, 5, 104-109.—There are two major flaws in the eugenic method, the fallacy of "mental" characters and the fallacy of germinal inheritance. The first one assumes the existence of a large number of well-defined mental characteristics or faculties, an obsolete conception and a recrudescence of the old Faculty Psychology. The second one assumes that, because so-called traits appear regularly in "family" lines, they must be germinally inherited, in ignorance of the fact that they have already been proved to be only socially inheritable.—G. J. Rich (Institute for Juvenile Research).

83. Griffing, J. B. Education and size of family in China. *J. Hered.*, 1926, 17, 331-337.—The average birth rate as well as the average number of surviving children is shown statistically to be significantly higher among educated Chinese than among illiterate Chinese. Facts were gathered for several thousand cases. The sources of information were threefold: (1) Women patients in eight hospitals, (2) direct survey in eight typical villages, (3) personal questioning of students of seven different groups ranging from age twelve to the rank of graduate assistant in the University of Nanking.—B. Burks (Stanford).

84. Luce, W. M. The effect of temperature on infrabar, an allelomorph of bar eye in *Drosophila*. *J. Exper. Zool.*, 1926, 46, 301-315.—An unselected inbred strain of the infrabar mutant of *Drosophila* has been raised at constant temperatures ranging from 15° to 30° C. The mean facet number of the compound eye is found to vary directly with the temperature at which the flies are raised. The results are given adequate statistical consideration.—L. Carmichael (Princeton).

85. Plunkett, C. R. The interaction of genetic and environmental factors in development. *J. Exper. Zool.*, 1926, 46, 181-244.—Characteristics of organisms may be determined by genes in the chromosomes. Almost nothing, however, is known about how these so-called genes produce their effects. The paper is devoted to a theoretical and experimental consideration of this process. The bristles of *Drosophila melanogaster* were studied as a typical character that is subject to quantitative estimation. The author believes that by virtue of their different "critical thermal increments" in conjunction with the morphological facts of development a series of chemical reactions may be identified. He suggests that these reactions form a series from the gene itself to the visible end result or adult character. Each reaction of this long chain is catalyzed by a product of the preceding reaction. The fundamental rôle of the gene is thus held to be the production of certain specific catalysts. The differences between races and individuals, it is held, may thus be due to the peculiarities of the genes which react upon the cytoplasmic components. The materials supplied by the external environment are thus modified and given typical form by a series of reactions which in the last analysis are initiated by the hereditary genes. The methods used in this study are "a combination of the methods and theories of genetics with those of physical chemistry."—L. Carmichael (Princeton).

86. Shastid, T. H. Our own and our cousins' eyes. *Amer. J. Physiol. Opt.*, 1926, 7, 167-199.—From a study of the eyes of the animals of the biological scale, the author makes a speculation with regard to the future development of the human eye. This, he believes, will involve a further narrowing of the field of vision and a decrease in binocular and stereoscopic vision.—S. W. Fernberger (Pennsylvania).

87. Sutherland, H. E. G., & Thomson, G. H. The correlation between intelligence and size of family. *Brit. J. Psychol. (Gen. Sect.)*, 1926, 17, 81-92.—A report is made of the correspondence between intelligence of school children, as measured by group tests standardized in England, and number of children in testee's family, as given by the child himself. After a résumé of findings related to the same problem, the subjects, about 2,800 English and Scotch children, are described. In the case of two unselected groups the r 's are $-.15$ and $-.22$, with a P. E. of .02. Attempts to determine the influence of position in family were largely unsuccessful, for reasons connected with the peculiarly elusive nature of family data as such. The computations are further greatly complicated by the problem of unfinished families; but by removing the cases most likely to belong to that category, the correlation was increased to $-.25$. The exclusion of all children having younger sibs (since the subjects were 11 years old, the probability is the highest possible—under the conditions—that the remaining families are finished) gave r equal to $-.18$. In schools having children somewhat selected for intelligence, the correlations were $-.06$ and $-.07$; these children, however, exhibit the presence of negative correlation by the smaller families to which they belong.—R. R. Willoughby (Clark).

88. Vladimirovski, A. V. "Heredity" and education. *Vojo de Klerigo*, 1926, 4-5, 1-2.—The author discusses several important problems, which (basing his judgment on his many years' work among teachers) he regards as the most interesting from the standpoint of that profession. He selects twenty practical problems, from which we may cite as examples: "How may inherited traits be distinguished from acquired ones?" "Is it possible to influence inherited qualities in man?" "What real bearing on education has the theory of heredity?" "Why are children of the same parents, reared under the same conditions, different?" "Is criminality inherited?" etc. In clearing up the problems enunciated, the author explains and analyzes various theories of inheritance, and at length formulates his conclusions: Inheritance is a determinate phenomenon.

The embryonic cell is a store-house of accumulated energy, with a certain initial potentiality and with formative tendencies only for the succeeding period; what it may become in its further evolution it is impossible to say in its growing state, since that will depend, being a determinate phenomenon, on the influence of the surrounding medium. The type of structure of the organism is only a part of its correlative functioning; wherefore many scientific studies of heredity, as a determinate phenomenon, can be successful only if they proceed by the conditioned-reflex technique (of the so-called "reflexological" school—Pavlov, Bekhterev, etc.).—(tr.) *R. R. Willoughby* (Clark).

[See also abstracts 57, 72, 140, 178.]

SPECIAL MENTAL CONDITIONS

89. **Alexander, F.** *Neurosis and the whole personality.* *Int. J. Psychoanal.*, 1926, 7, 340-352.—A study of the unconscious, repressing, self-punishing tendencies in the super-ego which in symptoms either alternate with the repressed tendencies or form a compromise with them. Fundamental eradication of the neurosis depends on the unmasking of this secret alliance.—*C. Moxon* (San Francisco).

90. **Blum, E.** *The psychology of study and examinations.* *Int. J. Psychoanal.*, 1926, 7, 457-469.—From psychoanalytic case material it is shown that failure in study and tests may be caused by unconscious and removable, anxious and guilty associations with the work. In one case, failure to pass an examination was a self-punishment for the indulgence of forbidden libidinal tendencies: success in passing through the examination threatened to rouse the birth anxiety (confirming Rank's view). Not to assimilate mental food meant renunciation of forbidden sexual curiosity and desire to return to the mother. To answer questions successfully meant the dreaded expulsion, the birth of thoughts with which the person was "pregnant."—*C. Moxon* (San Francisco).

91. **Burrow, T.** *The laboratory method of psychoanalysis; its inception and development.* *Amer. J. Psychiat.*, 1926, 5, 345-355.—The writer and his group have attempted to apply the laboratory methods of Freud in the treatment of individual cases to group analysis. "Perhaps the work of our group can best be described as the development of a social technique in the handling of problems which, being personal or ontogenetic, are equally social or phylogenetic." "The gradual result of our group inquiry was the reluctant exposure of social repressions that are as definite as the presumably personal repressions that have hitherto occupied us in individual analysis. In order to arrive at a phylogenetic substrate within the mental sphere, we need to observe the unconscious from a social basis of technique that is analogous to the individual basis of technique originally applied by Freud to the individual neurosis. For if we will observe the unconscious from a social basis, we shall find, I think, that there is the need for a laboratory study of consciousness in its social mechanisms that corresponds to the study of consciousness in its individual mechanisms. We shall find that there is the possibility of a laboratory approach to distortions of consciousness existing socially that is identical with our approach to the mental distortions which through Freud we first learned to recognize in the unconscious processes of the individual patient."—*E. Beckwith* (Boston Psychopathic).

92. **Federn, P.** *Some variations in ego-feeling.* *Int. J. Psychoanal.*, 1926, 7, 434-444.—The variations of bodily and mental ego-feeling involved in loss of consciousness in sleep, and in fainting, can be studied by self-observation and by psychoanalysis. Erotogenic zones are more resistant to loss of body feeling than other parts. It appears that libido cathexis is insufficient for both the body and

objects in dreams. Depersonalization follows perception of objects by organs not included in the body-ego and not invested with narcissistic libido. The difference between conversion and projection is discussed.—*C. Moxon* (San Francisco).

93. **Ferenczi, S.** The problem of acceptance of unpleasant ideas: advances in knowledge of the sense of reality. *Int. J. Psychoanal.*, 1926, 7, 312-323.—At first the baby knows no objects outside the self. Repeated and finally complete loss makes the breast an object of love and hate. This ambivalence is an absolutely necessary condition for the origin of a concrete idea. Things that always love us, i.e. that satisfy needs, we reckon as part of our ego. Things that always hate us we simply deny. (Freud shows that denial is the last attempt at destruction made against unpleasant but irremovable objects.) To things which partly or occasionally satisfy us we attach memory traces with the quality of objectivity. But ambivalence alone would lead to alternations of love and hate for objects. The capacity for objective judgment and action implies a capacity to neutralize these tendencies to love and hate. Extreme introjection leads to idealistic solipsism, i.e. to ego-centric infantilism. Extreme projection marks the purely materialistic psychophobe. Recognition of objects depends upon a sacrifice of narcissism. Between the sensory apparatus and motility a mental, largely unconscious reckoning machine chooses between ideas and actions according to their relative unpleasantness.—*C. Moxon* (San Francisco).

94. **Ferretti, G.** *Sogni e immagini ipnagogiche*. (Dreams and hypnagogic images.) *Riv. di Psicol.*, 1926, 22, 102-122.—Determining tendencies in our central nervous system play the preponderant rôle in dreams and in hypnagogic states. These tendencies, however, are not Freudian wishes, but rather our interests and desires at the time the dreams occurred, manifesting themselves in a rather primitive manner; that is, consciousness is on the level of that of children at play. In fact, through the study of dreams we can arrive at an understanding of individual and cultural mental development.—*T. M. Abel* (Cornell).

95. **Fortune, R. F.** The psychology of dreams. *Australasian J. Psychol. Philos.*, 1926, 4, 119-140.—Psychoanalytic treatment. The purpose is to reveal a hitherto unobserved mechanism of a certain class of dreams arising from mental conflict. In such dreams there is a revolution of the waking attitude, an overthrow of the censorship. "The censorship is overthrown by the weaker submergent by being confounded with a surrogate of the submergent, less repressed than it, and carrying its affect, which the surrogate communicates to the censorship, so overthrowing its power by infecting it with reprehensible affect against which it had been directed during waking." It occurs where the repressed affect is the tender emotion rather than fear or hate or sex.—*S. W. Fernberger* (Pennsylvania).

96. **Horney, K.** The flight from womanhood: the masculinity-complex in women, as viewed by men and by women. *Int. J. Psychoanal.*, 1926, 7, 324-339.—An attempt to correct the current psychoanalytical picture of feminine development, which is stated to be exactly that which the boy typically makes of the girl in a masculine civilization. The man's envy of motherhood has been undervalued. It is easier for the man to sublimate this desire than for the woman to sublimate her wish to play man's sexual rôle. Man's envy leads to depreciation of woman and over-compensation along culturally creative paths.—*C. Moxon* (San Francisco).

97. **Jelliffe, S. E.** Psychoanalysis and organic disorder: Myopia as a paradigm. *Int. J. Psychoanal.*, 1926, 7, 445-456.—Based on a number of observations a tentative conclusion is reached that "symbolic castration—which appears in the form of an organic deformation or malformation or organic chronic disease process—may be a compromise formation which enables the individual to

remain in the herd at the expense of a part of his body (*das Es*)" which locks up morally unacceptable and socially unusable libido in the symptom.—*C. Moxon* (San Francisco).

98. **Jones, E.** *The origin and structure of the super-ego.* *Int. J. Psychoanal.*, 1926, 7, 303-311.—Following Freud's view that the super-ego is the heir of the Oedipus-complex, Jones discusses the relation of the super-ego to consciousness, to repression, to the external object of love and hate, and then schematically describes the instinctual changes that follow the super-ego formation.—*C. Moxon* (San Francisco).

99. **Kardiner, A.** *McDougall's compromise with psychoanalysis.* *Ment. Hygiene*, 1926, 10, 509-540.—McDougall's criticisms of the Freudian psychology are based in considerable part upon his experience with the war neuroses, or traumatic neuroses, as they ought more properly be called. He neglects the differences in symptomatology, psychological fabric, mechanisms, "secondary" character traits, and psychological affiliations of the traumatic as contrasted with the transference neuroses. But it was in connection with the latter that the Freudian method and libido theory were developed. The traumatic neuroses are one of a series of diseases in which the analytic method has made little headway.—*G. J. Rich* (Institute for Juvenile Research).

100. **Klüver, H.** *Mescal visions and eidetic vision.* *Amer. J. Psychol.*, 1926, 37, 502-515.—Mescal buttons (peyote) were taken in order to compare the resulting vision with the phenomena reported by eidetic subjects. The mescal visions were such that adequate descriptive terms were difficult to find. They were usually localized at reading distance, with the center of the visual field distinguished from the remainder in respect to color, brightness or rotation. They could not be influenced by "thinking" and "will." The spontaneous ability to see colors or shapes, reported in eidetic phenomena, was entirely lacking. The size of after-images and the perception of depth were not influenced. Positive after-images of long duration were obtained by sudden illumination in a dark room. Color vision was, in general, increased in saturation and brightness. Auditory impressions were loud and voluminous. The line of demarcation drawn between "object" and "subject" in the normal state seemed to be changed. The body became "objective" in a certain way and the objects "subjective."—*G. J. Rich* (Institute for Juvenile Research).

101. **Laird, D. A.** *Sex indulgences and psychoneurotic tendencies in middle adolescence.* *Psychoanal. Rev.*, 1926, 13, 496-498.—A comparison of the psychoneurotic tendencies (measured by the unrevised form of Woodworth's Psychoneurotic Inventory) of celibate and occasionally indulging college students (both sexes, all unmarried). For groups of 7 and 8 women respectively, the celibate were less psychoneurotic than the indulging; for groups of 10 and 15 men, there was no difference. Though it is pointed out there may be several possible reasons for this, the hypothesis that the fear of consequences is more oppressive mentally to women than to men is tested out by comparing the incidence of commitments in the general population; this is slightly greater for women, but the value of this fact as an explanation for the indulgence findings is somewhat reduced by the fact that the average for the indulging group in both sexes is the same as that for the entire group (42 men, 67 women).—*R. R. Willoughby* (Clark).

102. **Müller-Braunschweig, C.** *The genesis of the feminine super-ego.* *Int. J. Psychoanal.*, 1926, 7, 359-362.—In the little girl there is a primary feminine sexual attitude. The active super-ego with its masculine fantasy arises as a reaction-formation against the anxiety and guilt threatened by the passive fantasies.—*C. Moxon* (San Francisco).

103. **Pressey, H. E.** A conception of the subconscious. *J. of Abn. & Soc. Psychol.*, 1926, 21, 277-283.—The types of cerebration may be listed under two main captions, *consciousness* and *subconsciousness*. At least three divisions of the field of consciousness can be made out. In addition there is evidence for a variety of cortical activities not correlated directly with it. All such activities are subsumed under the heading *subconsciousness*. In the normal person there are *normal subconscious processes*, and the *normal unconscious*, comprising those elements not functioning at the moment. The normal unconscious consists of nonfunctioning neurograms (Prince's conception modified to mean a synaptic connection which has been traversed by an impulse, the impulse leaving a temporary or permanent configuration) and untried synapses. These possibilities for the making of neurograms are subdivided into *preneurograms*, which are particularly liable to use, e.g. instincts, and other possible connections. In abnormal individuals there is in addition another type of process which may be called *disconscious*, those which are functioning at the moment being *coconscious*, and those not functioning unconscious. Under this head come both active and inactive complexes and separate personalities. Neurological schemata illustrating in terms of corresponding cortical processes are given, and the more important subdivisions of *consciousness* and *subconsciousness* are summarized in a table.—*E. N. Brush* (Boston Psychopathic).

104. **Rado, S.** The psychic effects of intoxicants: an attempt to evolve a psychoanalytic theory of morbid cravings. *Int. J. Psychoanal.*, 1926, 7, 396-413.—Analgesic drugs give an artificial defence against stimuli; morphia, for example, may cause projection of the illness on to others. The pharmacotoxic gratification is a primitive form of orgasm, replacing the primary alimentary orgasm, and thus leading to reduced appetite for food and for object love.—*C. Moxon* (San Francisco).

105. **Rank, O.** The therapeutic applications of psychoanalysis. *Ment. Hygiene*, 1926, 10, 495-508.—All forms of love finally rest upon love for the mother. The prenatal libido situation is the ideal prototype of every later libido satisfaction. It is a complete gratification that can never later be obtained. Hence birth is a severe trauma. The neurotic individual fails to adjust satisfactorily to this trauma, while his healthy fellow beings transfer their libido in such wise as to obtain satisfaction from the normal processes of life. In the process of psychoanalysis, the libido is loosened from the mother fixation, temporarily transferred to the analyst, and finally again freed from this transference.—*G. J. Rich* (Institute for Juvenile Research).

106. **Reich, W.** The sources of neurotic anxiety; a contribution to the theory of psychoanalytic therapy. *Int. J. Psychoanal.*, 1926, 7, 381-391.—The author accepts as much of Rank's theory of birth anxiety and Adler's theory of aggression anxiety as can be harmonized with the Freudian view that the immediate source is libido congestion.—*C. Moxon* (San Francisco).

107. **Simmel, E.** The "doctor-game", illness and the profession of medicine. *Int. J. Psychoanal.*, 1926, 7, 470-483.—Children's doctor-games are means of symbolically satisfying libidinal desires that are incapable of direct gratification or awareness. The same unconscious motives lead some persons to become doctors and thereby to change the current of sadistic impulses from inner, masochistic, to outer motility. By identification, the unanalysed specialist may take his patient's symptoms (*Mitleiden*). By examples the surgeon-game is shown to satisfy the same ambivalent emotion to the parents as the sacrifices of savages.—*C. Moxon* (San Francisco).

108. **Taylor, W. S.** Readings in abnormal psychology and mental hygiene. New York: Appleton, 1926. Pp. xxxiii + 789.—This book consists of over two hundred selections from many different authors. Its aim and scope may be indi-

cated by the following from the author's preface: "The selections to be found in this volume have been chosen for their usefulness as so many sections of a textbook for students. To that end, writings of primarily historical or controversial interest, or authors' points of view as such, have been disregarded in favor of what seemed to be contributions to understanding phenomena. Of the material so included, it may be said that, on the whole, acquaintance with elementary psychology is presupposed; only brief mention is made of feeble-mindedness, as occupying principally a neighboring field; no more psychiatry is touched upon than the student of abnormal psychology needs to be familiar with; and the problems of delinquency and crime, mediumship, mysticism, 'the racial unconscious,' etc., are not brought in, because for those subjects the general principles of abnormal psychology would seem to require first consideration. The especial emphasis in this book is upon 'functional' phenomena—processes which may be regarded as the core of abnormal psychology, as well as most illuminating for students of general psychology, of medicine, of sociology, and of education. The language employed here is taken for the most part to express the stimulus-response point of view." Professor Taylor has classified and arranged these readings under the following main headings: the field and its importance; nomenclature, classification, and diagnosis; causes of nervous and mental disease; historical sketch of treatment and theory of the functional neuroses; some basic psychological conceptions; the principle of dissociation; memory in relation to abnormal psychology; meaning and its significance; symbolism; wishes, sentiments, complexes, systems; conflict and some of its manifestations; mental regression; disturbances of sensation, of organic functions, and of emotion; functional motor abnormalities; dissociation of personality; the subconscious; the nature of suggestion; hypnotic conditions; illusions and hallucinations; dreams; higher processes in the light of abnormal psychology; problems of personality and character; general conceptions of functional disorders; psychotherapy; some general illustrations; and mental hygiene. There is thus a logical sequence and continuity in the presentation of the material and this sequence has been further emphasized by the interpolation of various introductory and explanatory paragraphs by the author. There is an introduction by Professor Jastrow, who originally suggested the undertaking. In this introduction Jastrow surveys some of the principles and points of view which have assisted in the understanding of the abnormal mental life. There is also a selected bibliography and an index of subjects and authors.—*J. W. Bridges* (McGill).

109. **Young, P. C.** **An experimental study of mental and physical functions in the normal and hypnotic states: additional results.** *Amer. J. Psychol.*, 1926, 37, 345-356.—The perceptual acuity of hypnotized subjects shows no difference from the same ability when the subjects are in a waking state, provided both are measured in the same way. The usual view that perceptual powers are greatly augmented in hypnosis is due either to a lack of their measurement while waking, or to the use of abnormal persons who exert themselves to the full only when hypnotized. Memory for childhood events is improved in hypnosis. Post-hypnotic amnesia varies greatly with the subject, and is never total. It is no more valid a criterion of a genuine hypnosis than dreamlessness is of real sleep. For the most part, hypnosis seems to consist in taking, with great conviction, an attitude of mind. Even though all mental functions in the two states should be proved to be equal, still the differences in what the subject will and will not do, his ability to take an attitude, are enough to differentiate the two states. The hypnotic attitudes are emotional, impulsive, and voluntary rather than intellectual.—*G. J. Rich* (Institute for Juvenile Research).

[See also abstracts 1, 37, 40, 122, 132, 165.]

NERVOUS AND MENTAL DISORDERS

110. Benjamin, J., & Lauer, J. Preliminary report on a clinical study of enuresis. *J. Delinq.*, 1926, 10, 389-398.—Eleven cases of enuresis are discussed, as well as their apparently successful treatment through the establishment of hygienic daily routines, the adjustment of certain social problems, the correction of pertinent physical defects, and the use of some medication.—H. L. Koch (Texas).

111. Branham, V. C. Epileptoid reactions in children. *Amer. J. Psychiat.*, 1926, 5, 423-429.—The group of reactions described as epileptoid are those which bear a definite relationship to the epileptic seizure. The seizure itself or the loss of consciousness is no longer looked upon as the distinguishing feature of this syndrome. The cases appearing in the children's guidance clinics which exhibit epileptoid reactions are classified into two groups: (1) The latent type of epilepsy. The attack usually occurs at night, but there are marked changes in the child the next day, including pallor, confusion, and dullness. (2) The group presenting *petit mal* features. In this group there may not be a demonstrable seizure, but the symptoms are those familiar in epilepsy. Some of these are headache, nausea, dizziness before the attack, flashes of color, unusual pallor, and dilatation of the pupil without apparent cause. The epileptoid child is emotionally unstable, sensitive, and self-centered. Most of these children are moderately retarded. Physically they are inclined to be anemic and thin. The three outstanding features in the histories of children exhibiting these reactions are (1) a history of repeated seizures throughout childhood and infancy; (2) prevalence of epilepsy in the family and the presence of an inherited neurotic tendency; (3) a strong tendency to mental retardation. The treatment of these children consists of intensive medication including a guarded use of luminal, glandular formulae, enemas and good mental hygiene. The avoidance of mental conflicts and exciting factors and training in relaxation are recommended. The epileptoid child should be looked upon as a problem for the psychiatrist, for he is mentally ill.—E. Beckwith (Boston Psychopathic).

112. Cadwalader, W. B. Lemniscus symptoms following epidemic encephalitis: Bilateral impairment of deep sensation. *Arch. Neur. & Psychiat.*, 1926, 16, 605-612.—The author records three cases of patients who were carefully observed while in the wards of the hospitals. The mode of onset of the symptoms in these cases, especially in the wake of an attack of "flu" characterized by remissions and exacerbations and associated with ocular paralysis, justifies the opinion that the process was epidemic encephalitis. Bilateral impairment of deep sensation could then be attributed to a lesion in the medulla oblongata implicating the lemniscus, and the motor symptoms to implication of the pyramidal tracts which lie anterior but adjacent to the lemniscus. The resemblance of the symptoms to multiple sclerosis appears striking. On account of the associated motor weakness of the legs, the complete clinical picture resembles that of posterolateral sclerosis of spinal origin, so frequently caused by syphilis or associated with anemia. The writer states that since the preparation of this article, he has had under observation a case regarded as multiple sclerosis. The history and symptoms resembled those of Case I (recorded in the article). Because of intense impairment of deep sensation, the patient's left hand had become practically useless; after two months had elapsed almost complete recovery occurred spontaneously, though ocular symptoms and motor symptoms of the lower limbs persisted.—I. Rappoport (Boston Psychopathic).

113. Dandy, W. E. A sign and symptom of spinal cord tumor. *Arch. Neur. & Psychiat.*, 1926, 16, 435-441.—A case of tumor involving the spinal cord in which sudden signs and symptoms of spinal cord compression developed

repeatedly when the patient strained at stool is reported in detail. The sudden onset of root pains, tract pains and backache following sneezing, coughing and straining at stool are important factors in differentiating tumors from other lesions affecting the spinal cord. These symptoms may be explained by a sudden increase of the intraspinal pressure above the tumor which forces the spinal cord against the spinal tumor, causing a disturbance of the spinal cord function.—*E. Beckwith* (Boston Psychopathic).

114. **Davies, E. A.** *An interpretation of mental symptoms of dementia praecox.* *J. Abn. & Soc. Psychol.*, 1926, 21, 284-296.—For a scientific understanding of dementia praecox, it is necessary not only to list and describe the symptomatology, but to study the mental conditions from the standpoint of the relations that the manifest symptoms have to each other, and to determine what is central, and, as it were, causative, and what is peripheral and contingent. The symptoms do not rest on processes equally disturbed. So little is known of these phenomena that their incidence is not necessarily to be taken as indicative of mental disease. The author suggests that dementia praecox be considered as essentially a progressive disturbance of the emotional life, a weakening of negative self feeling without a compensatory development of positive self feeling. Clinical findings point to this view, and the mental processes in dementia praecox are of the kind that would be expected in normal individuals whose emotional life was temporarily disturbed in this way. Delusions are so characterized because they fail to meet the test of reality, but for the patient, the meaning of the delusion is not to be found in the real world at all, but it is the language which he employs to express his meaning. It is this that gives him his world, and only as we share the meaning of his delusions can we understand his condition. The total picture of dementia praecox is that of a mind that has allowed the emotional disturbances that normally accompany the common failures of life to become the central and controlling motive of its thought and action. The disease, psychologically considered, is a series of efforts it makes to reestablish itself in the community of its fellows, but in the wrong way. Whatever the form, there is always a false direction of personal activities that have their basis in the one-sided importance attached to self feeling. The intellect undergoes a progressive deterioration because of the insufficiency of the affective motive, and the increasing inadequacy of objective material due to the narrowing of contacts.—*E. N. Brush* (Boston Psychopathic).

115. **Emerson, C. P.** *Mental hygiene: Wise and unwise investments.* *Ment. Hygiene*, 1926, 10, 449-463.—Much that has been written with regard to eugenics in the mental field is without foundation in fact. We know nothing at all of the laws which determine how much of a mental characteristic or ability is transmitted, even granting that these are inherited. The problem of the mentally deficient is not primarily one of eugenics, but one of education of the community in the need for proper treatment of the feeble-minded. Mental hygiene seeks to prevent many cases of mental disease by directing the lives of unstable persons along sound lines. The problems of mental instability and genius are closely related, so that measures for the protection of a group of problem children are very likely to conserve a possible genius. Nutritional conditions are likewise of importance, for under-nutrition and mental stability cannot go together. Mental hygiene has no therapeutic panacea for the relief of mental deficiency and mental disease. The first step in the solution of this great social problem is not a coercive social reform, but the arousing of an enlightened social conscience.—*G. J. Rich* (Institute for Juvenile Research).

116. **Gordon, A.** *Remarks on astereognosis.* *J. Nerv. & Ment. Dis.*, 1926, 64, 359-361.—This is a presentation and discussion of a case whose clinical picture consists of a motor symptom in the form of left lower facial palsy and of a

sensory symptom in the form of astereognosis of the left hand, of such a character that it indicates the possibility of the existence of a certain form of astereognosis which is independent of other sensory disturbances—the so-called “asymbolia” of Wernicke and Claparède.—*C. P. Armstrong* (Boston Psychopathic).

117. **Humphrey, E. F. Occupational therapy in the psychopathic hospital.** *Occup. Therap. & Rehab.*, 1926, 5, 367-373.—The problems of the psychopathic hospital differ from those of a state hospital because of the more rapid turnover. The patients have only recently been outside and are not “hospitalized.” Consequently the occupational therapy should be similar to something with which they have been previously familiar, such as a bit of sewing for women or a simple piece of woodwork for men. Confidence is gained by the sight of other patients busy and contented in pleasant surroundings. The possibilities of occupational therapy for the patient who needs little oversight are often not realized because most time is occupied with the violent or depressed.—*H. E. Burt* (Ohio State).

118. **Jelliffe, S. E. Postencephalitic respiratory disorders: Review of the syndromy, case reports and discussion.** *J. Nerv. & Ment. Dis.*, 1926, 64, 362-370.—The author quotes Wilson's article, “Pathological Laughing and Crying,” *J. Neur. & Psychopath.*, 1924, 4, 299, reviewing the localization of the respiratory centers and couching his general conclusions thus: “There are corticifugal paths to the faciorespiratory centers in the pons and medulla that are independent of the voluntary cortico-ponto-bulbar tracts to the same nuclei; on excitation they will either arrest or accelerate, i.e. interfere with, the normal rhythmic activity of the respiratory synkineses in the direction either of laughter or the reverse. Their exact course remains for further substantiation; it is perhaps noteworthy that they make their way separately towards the midline skirting the lower optic thalamus (in the case of one) and passing by the lower regio subthalamica to the tegmentum, and so to more caudal levels of the neuraxis.” Bulbar implications alone cannot elucidate the syndromy under consideration, for practically all observers have noted that under certain situations of attention distraction this breathing behavior is partly or entirely overcome, or under certain emotional stimuli it may be made worse, or that it practically always disappears in sleep. All this leads “to the consideration of the broader mechanisms of the emotional releases through the speech mechanism, of the highly complex relationships of visceral component involvements in the encephalitic syndromy and their behavior manifestations, which opens up the enormous territory so actively under investigation by students of the problem of the psyche and the vegetative nervous system, to mention only Kupperts, Hess, Lotmar, and finally of the metapsychological problems investigated by Freud and his school in the formulations of the Super-Ego, the Ego and the Id.”—*C. P. Armstrong* (Boston Psychopathic).

119. **Kasanin, J. The blood sugar curve in mental disease. II. The schizophrenic (dementia praecox) groups.** *Arch. Neur. & Psychiat.*, 1926, 16, 414-419.—This study was undertaken in order to see if there is a characteristic blood sugar curve in the schizophrenic group. The technic of Janney and Isaacson was used in the determination of the curves. The writer concludes from his own observation and from the data collected by others that the average curve falls within normal limits, although the percentage of abnormal sugar curves is much higher than in normal individuals. Patients in a stupor generally respond with a high sustained sugar curve. His results do not support the view that there is a characteristic sugar curve in this group.—*E. Beckwith* (Boston Psychopathic).

120. **Kasanin, J., & Petersen, J. N. Psychosis as an early sign of epidemic encephalitis.** *J. Nerv. & Ment. Dis.*, 1926, 64, 352-358.—Four cases of epidemic encephalitis are here reported in which a psychosis was the earliest clinical picture while neurological signs developed later. It is stated that epidemic encephal-

litis may at the onset present signs of an organic delirium while on the other hand it may closely resemble a functional psychosis. And the suggestion is made that a thorough review of the early histories of atypical cases of schizophrenia or affective disorders might reveal a previous encephalitis.—*C. P. Armstrong* (Boston Psychopathic).

121. **Lowrey, L. G.** Program for meeting psychiatric needs in the city. *Ment. Hygiene*, 1926, 10, 464-479.—Three groups of children present especial problems in mental hygiene: those whose homes are broken up and whose lives are ordered by social agencies, institutions and foster homes; those who show retardation in intellectual development, and those who are behavior problems in home, school or community. It must be recognized that mental hygiene is not the job of any one group in the community. The number of experienced workers is limited and such personnel as is available must be used in terms of leadership. Moreover, the worker in this field must overcome the inertia of the community. An organization for mental hygiene may operate best as a central independent clinic, not associated with any one social agency, but rather a coordinating and cooperating center.—*G. J. Rich* (Institute for Juvenile Research).

122. **Paulsen, A. E.** Religious healing. *Ment. Hygiene*, 1926, 10, 541-595.—The prevalence of religious healing and allied cults bears witness to the fact that the maintenance of individual health has become strongly associated in the minds of many people with religious and metaphysical ideas. There is a great variety of sects and cults and movements appealing to this popular tendency. Some are organized outside the church, and some are within the church. The attitude towards the medical profession ranges all the way from hearty coöperation to frank hostility. The leaders of the various movements are little disposed to set any definite limitation to the power and effectiveness of their therapy. The nature of the problem with which they are dealing is not fully comprehended by any of them. Since religious healing has for the most part been carried on without expert determination of patient's condition after treatment, it is not possible to pass judgment on the merits, harmfulness, or limitations of this movement. Where spiritual therapy has been attempted under medical control, the results seem to indicate that neurotic patients, alcoholic habitués, drug addicts, and the like are sometimes improved by the treatment, and that the morale and comfort of a patient with organic disease may be improved while the disease continues to run its course.—*G. J. Rich* (Institute for Juvenile Research).

123. **Pollock, H. O.** Frequency of dementia praecox in relation to sex, age, environment, nativity and race. *Ment. Hygiene*, 1926, 10, 596-611.—Data concerning dementia praecox patients in hospitals and first admissions thereto, derived principally from the Federal Census of institutions for mental disease taken as of January 1, 1923, and from the statistical records of the New York State Hospital Commission, indicate that the disease occurs more frequently among males than among females. In males, the onset is earlier than in females. Dementia praecox is more prevalent in cities than in rural districts, among foreign born than among native population, among negroes than among whites. It is relatively more frequent among some European races than among others.—*G. J. Rich* (Institute for Juvenile Research).

124. **Van Bogaert, L., & Bertrand, I.** Pathologic changes of senile type in Charcot's diseases. *Arch. Neur. & Psychiat.*, 1926, 16, 263-284.—The work of several investigators in the study of the pathologic anatomy of senility as well as the authors' own research is considered. Two cases of amyotrophic lateral sclerosis showing certain lesions which have hitherto been accepted as typical of senility are discussed in detail. Their presence is taken to indicate that the brain, without being beyond the sixth decade, may contain certain pathologic conditions capable of causing its involution when the metabolism of the nervous

system approaches that of normal or pathologic senility.—*E. Beckwith* (Boston Psychopathic).

125. **Warner, F. J.** A contribution to the histopathology of amyotrophic lateral sclerosis. *J. Nerv. & Ment. Dis.*, 1926, 64, 229-234.—Hassin showed that the entire motor apparatus of the central nervous system except the nuclei of the ocular nerves was involved in a degenerative process in amyotrophic lateral sclerosis. On the other hand Alzheimer found in a case of progressive muscular atrophy cell changes not only in the anterior horns but also in the medulla and the motor cortex, while in bulbar paralysis marked degeneration of the motor nuclei of the medulla was associated with much of the motor cortex and the anterior horn cells. Therefore it may be concluded that the changes in amyotrophic lateral sclerosis, bulbar paralysis and progressive muscular atrophy are essentially of the same character, differing in intensity of certain areas involved. Then follow the findings in an undoubted case of amyotrophic lateral sclerosis—a case report, summary and discussion.—*C. P. Armstrong* (Boston Psychopathic).

126. **White, W. A.** The language of schizophrenia. *Arch. Neur. & Psychiat.*, 1926, 16, 395-413.—In order to understand the language of schizophrenia, one must understand the origin and development of language itself. The point is stressed that there is no absolute identity between an idea and its expression and the reality of the object referred to. One of the biggest obstacles in the way of understanding the language of the schizophrenic has been the conception that the words he uses symbolize the same objects that they do in our experience. There is very often a discrepancy between the symbols and the ideas they represent. The writer assumes that schizophrenia is a regression psychosis and that therefore one can expect to find in the language of schizophrenia traces of earlier development. Thought and language in their development change from feeling, concreteness, and perception, in the direction of reasoning, differentiation and abstraction. In the schizophrenic, one finds the reversal of this law; his thinking and speech degrade to a lower order of abstraction. This principle may partly explain hallucinations, for as thinking reaches more and more primitive levels it arrives finally at a concrete perceptual level; thoughts are manipulated as though they had substance. There are many other factors in the speech of the schizophrenic to be considered, particularly the pleasure-pain principle and the dynamics of the mouth zone.—*E. Beckwith* (Boston Psychopathic).

127. **Wright, W. W.** Results obtained by the intensive use of bromides in functional psychoses. *Amer. J. Psychiat.*, 1926, 5, 365-387.—The plan of giving bromides was that of administering large doses and yet avoiding the toxic features. The 85 patients treated were those who presented the greatest problem in care and who had failed to respond to other forms of treatment. The degree of improvement and its permanence varied greatly; 50 per cent. of the cases showed a decided improvement, while 75 per cent. improved to some extent. The improvement consisted in lessened destructiveness, confusion and untidiness, and a slackening of the erotic tension. The patients became more cooperative and in many cases were able to help with the work on the wards. The actual methods of administration of the drug and the dangers to guard against are taken up in some detail, as are several case records.—*E. Beckwith* (Boston Psychopathic).

[See also abstracts 19, 89, 90, 99, 101, 104, 138, 145, 149, 161, 164, 165.]

SOCIAL FUNCTIONS OF THE INDIVIDUAL

128. **Aden, M. E.** Preliminary report of a study of the motor ability of delinquent boys and girls of the Los Angeles juvenile court. *J. Delinq.*, 1926, 10, 351-367.—The scores of 410 delinquent and dependent children on the Pintner-Paterson Short Scale of Performance Tests are compared with those of the school group used by the authors in the standardization of the Scale. Inter-correlations are presented for the Pintner-Paterson scale, the Stanford-Binet test, and the Stenquist tests of mechanical ability. The problem of attitude in relation to success in the test situation is faced. It is concluded that the Pintner-Paterson scale taps some traits or skills not tapped by the other two tests and, hence, may be valuable as a supplemental tool in the analysis of problem children. It is suggested that the school, through stressing verbal and language skills and failing to appreciate certain visual-manual abilities, may operate to bring about social maladjustments.—*H. L. Koch* (Texas).

129. **Bernard, L. L.** An introduction to social psychology. New York: Holt, 1926. Pp. x + 651.—The author presents a comprehensive account of the principles of social psychology, without developing the field of applied work, which he holds should be given in separate treatises. The author's viewpoint is that social psychology is an outgrowth of both psychology and sociology. The present work seeks to bring together and harmonize the treatments of previous writers in the field. It is written from a semi-behavioristic point of view and on a level of intermediate difficulty. The chief sub-divisions are: Introduction (the nature and scope of the science), foundations of collective behavior (primarily in the individual), the integration of personality in the psycho-social environment, and the psycho-social environment and the organization of collective behavior. The volume closes with an extensive bibliography.—*W. S. Hunter* (Clark).

130. **Boyakin, E. E.** A survey of the field of clinical psychology in New York state. *J. Educ. Psychol.*, 1926, 17, 402-407.—Attempt was made by means of the questionnaire to discover facts concerning the number and work of clinical psychologists in New York State. The results are inadequate because many of the 22 questions were frequently not answered; sometimes because there had been kept in institutions no adequate records of the material sought. Some of the conclusions: (1) There is no centralizing agency for psychological examinations. (2) Very few psychological, but many psychiatric clinics. In nearly all of these latter the Stanford Revision is given. (3) The psychological profession is greatly underpaid. (4) There are nine city school systems in which there are child study laboratories. (5) The residence of a very large proportion of psychologists is in New York City.—*A. M. Jordan* (North Carolina).

131. **Cattell, J. McK.** The scientific men of the world. *Scient. Mo.*, 1926, 23, 468-471.—A table is given to show the distribution of scientific men among the different nations in 1914. America was in the lead, especially in psychology, zoology, botany, agriculture and geology, but behind in some of the applied sciences. Today she has probably increased the lead. This, however, is not in proportion to her population nor her wealth and opportunities. The high productivity of small nations suggests that, as in Greece, England, New England, etc., regional cultivation of special fields may be more needed than much control from Washington.—*J. F. Dashiell* (North Carolina).

132. **Cowell, H.** The process of musical creation. *Amer. J. Psychol.*, 1926, 37, 233-236.—A composer uses his own mind as a musical instrument. Every

conceivable tone-quality and beauty of nuance, every harmony and disharmony, or any number of simultaneous melodies can be heard at will by the trained composer. He can hear not only the sound of any instrument or combination of instruments, but also an almost infinite number of sounds which cannot as yet be produced on any instrument. In the writer, this ability has come as the result of a long self-training which began in childhood with the mental rehearsal of compositions that had been heard. Then came the experience of having sounds leap unexpectedly into consciousness. At first these could not be voluntarily controlled, but in time the control was achieved so that a flow of sound can now be turned on at will and its nature regulated as desired.—*G. J. Rich* (Institute for Juvenile Research).

133. **Darsie, M. L.** *Mental capacity of American-born Japanese children.* *Comp. Psychol. Monog.*, 1926, 3, 15, 1-89.—An attempt is made to investigate possible differences in intellectual capacity between American and Japanese races as represented by samplings of each found in California. The subjects were 658 American-born Japanese children between the ages of 10 and 15 years. The tests used were the Stanford Revision of the Binet Scale, the Army Beta, and the Stanford Achievement Test. Ratings of teachers on all school subjects, and on 19 general social traits were obtained for Japanese children in comparison with their estimates of average American children of the same age and grade. It was found that Japanese children are inferior to those of American and northern European parentage in "mental processes involving memory and abstract thinking based on meaning or concepts represented by the verbal symbols of the English language." Japanese children are at least equal and possibly superior to American children in mental processes involving memory and thinking based upon concrete, visually presented situations of a non-verbal character and are superior to Americans in mental processes involving acuity of visual perception and recall and tenacity of attention. In reading and language Japanese children are markedly inferior to American. In informational subjects depending partly upon reading, Japanese are slightly inferior to American children. In arithmetic and spelling the differences are negligible. In penmanship, drawing and painting, Japanese children are superior to American. No final conclusion as to racial differences in variability was justified. No significant differences in variability between boys and girls were found. Children in metropolitan cities are markedly superior to those of small cities and towns in all tests. Among both Japanese and American populations, there was a definite tendency for children of parents engaged in professional and commercial occupations to surpass those whose parents are manual laborers. Japanese children impress teachers as being less self-confident, freer from vanity, and more sensitive to approval than American children, as well as more stable emotionally and more responsive to beauty. In originality and general intelligence, American children are judged superior, while no significant differences appear with regard to the moral-social traits, as sympathy and generosity. Bibliography of 38 titles.—*C. J. Warden* (Columbia).

134. **Duffus, R. L.** *Where do we get our prejudices?* *Harp. Mag.*, 1926, —, 503-508.—Results of a study of the sources of public opinion conducted by *The Inquiry* of New York City under the direction of Mr. E. C. Carter. A variation of G. B. Watson's tests of fair-mindedness (Form A) was given to a group of a thousand intelligent Americans. 98% crossed out, signifying unpleasant affect, the word "Bolshevik," 90% "Turk," 50% "Mexican," 30% "immigrants." Extracts from letters giving the conscious sources of such prejudices are quoted, revealing the preponderance of emotional experiences of childhood associated with unpleasant reactions to the words. Another study conducted by Mr. Lasker, also of *The Inquiry*, shows that the race attitudes of children are

very obviously derived from parents, motion pictures, teachers, etc., and are accordingly products of the emotional reactions of others.—*A. L. Allport* (Dartmouth).

135. **Garth, T. R.** Race and psychology. *Scient. Mo.*, 1926, 23, 240-245.—On the question of whether racial differences are native or environmental authorities are opposed. Psychological group tests have demonstrated that taking the average white I. Q. as 100, the average of Chinese is 98 or 99; of Japanese, 98; of the American Negro, 75; of the Mexican, 89—with much overlapping. With education the American Indian shows an increased interest in colors, the white a decreased. A few other trait differences are mentioned.—*J. F. Dashiell* (North Carolina).

136. **Hankins, F. H.** Racial differences and industrial welfare. *Indus. Psychol.*, 1926, 1, 94-98.—Questions Grant's conclusions regarding Nordic stock. The author insists that the policies for the immediate future with regard to immigration must be a higher standard for admission, largely based on mental tests, and a wider spirit of toleration between the native and the foreign elements now in the country.—*S. W. Fernberger* (Pennsylvania).

137. **House, S. D.** The concept of realization in literature and life. *Psychoanal. Rev.*, 1926, 13, 461-469.—The author proposes for consideration an antithesis between Realism and Realization, which he submits goes far to resolve several time-honored disputes. Realism, he says, deals with *experiences*—Realization with *values*. Life is essentially realism, and is accepted; men do not fight against experiences in themselves. Literature is essentially realization, and is not accepted; there is little against which men fight harder than being made acquainted with the values inherent in their experiences. "A whole religion of rebuttal (and evasion)—the Cult of Puritanism—has developed to frustrate the aims and consequences of Realization, more particularly as embodied in modern literature." The argument is made more concrete by arranging well-known writers (all realistic) in the approximate order of their capacity for inducing realization; it is found, of course, that those with this capacity most developed are those most cordially hated.—*R. R. Willoughby* (Clark).

138. **Karpman, B.** Psychoses in criminals: Clinical studies in the psychopathology of crime. *J. Nerv. & Ment. Dis.*, 1926, 64, 331-351.—The author states that these are intimate psychopathological studies based on carefully correlated material of each individual criminal, his personality make-up, the psychological setting in which the crime was committed and the particular reaction manifested on and following imprisonment, with the purpose of understanding criminality as a total life reaction and as a specific expression of a diseased personality at the psychological level. Though this material at St. Elizabeth's Hospital, Washington, D. C., is neuropsychiatric mainly, it is only an exaggeration or distortion of the normal. Psychiatrists have pointed out that often crime is not wilfully intentioned but is rather the result of some mental aberration, although in other respects the individual seems normal. Psychoanalytic studies show that criminal behavior often is an outlet for and symbolically expresses the same underlying emotional conflicts as in kleptomania, exhibitionism, pyromania, etc., and is determined like other forms of behavior by mental states. The same intimate relation exists between crime and psychoses with similar basic defects and common background and origin. Criminal reactions must be correlated with the total personality of which they are an expression and personality is the totality of reactive manifestations to environment. The harmonious working of the three fundamental animal instincts, the ego, sex, and gregarious instincts, produce the normal personality with orderly integration. Personality defects

causing abnormal behavior are due to abnormal modification, disturbance, or distortion of these three basic drives. Conflicts between the ego and sex drives never produce distortions of personality abnormal enough to be manifested by neurotic or psychotic reactions unless they come in conflict with the expression of the gregarious instinct—the urge that drives the individual to live up to standards set by the herd. The normal individual has complete harmony between the self and society, the psychoneurotic suffers from sexual difficulty obvious or cryptic but apparently is reasonably adjusted socially, the constitutional psychopath has fundamental sexual difficulties but these conflicts show in an inability for adequate social adjustment, the psychotic has social and sexual difficulties, and the defective with arrested development at every level of life is guided by his primitive needs in conflict with society. It seems reasonably certain that the criminal behavior of psychotics is all but universally conditioned by some unsolved psychosexual difficulties responsible for the commission of the offense. And the presence of abnormal and socially unacceptable sexual drives distorts the personality, and loss of contact with society following often results in anti-social behavior. The closer the individual's interests are to life the more acute and heightened will be his reaction to confinement.—*C. P. Armstrong* (Boston Psychopathic).

139. **Lowery, H.** Cadence and phrase tests in music. *Brit. J. Psychol. (Gen. Sect.)*, 1926, 17, 111–118.—This is an account of the elaboration of a test of some of the factors involved in musical appreciation, as against the more elementary abilities necessary for discrimination. The subjects were 50 girls between the ages of 12 and 14, of all degrees of musical instruction. In the cadence test the subject records judgments as to whether the second of two chords seems more or less complete than the first. The standard of correctness used in the scoring is that “revealed by the standard classical compositions of the last three centuries.” Half the subjects made from 60 to 69% correct judgments. The highest mark was 80%, the lowest, 46%. Marked divergences are explained. The phrase test was designed to measure the ability to detect differences in grouping a given series of notes. The judgments are on the similarity or difference of the members of a pair. The distribution is virtually identical with that resulting from the cadence test. Further developments of both are promised.—*R. R. Willoughby* (Clark).

140. **Malinowski, B.** Crime and custom in savage society. New York: Harcourt Brace, 1926. Pp. xii + 132.—Exceedingly interesting account of the customs and laws of the natives of the Trobriand Archipelago in north-west Melanesia. As the result of a new minimum definition of law, the author finds not only a highly developed criminal but also a highly developed civil law as well. He strongly controverts the assertions of Rivers *et al.* that the adherence to law and to custom in primitive societies is the result of “group-sentiment” or “group-instinct” but shows that the basis is quite rational and practical, involving mutual give-and-take, rather than “slavish and spontaneous.” Nor is the adherence to law and custom absolute, as the author shows a definite and well-established system of evasion.—*S. W. Fernberger* (Pennsylvania).

141. **Mogensen, M. F., & English, H. B.** The apparent warmth of colors. *Amer. J. Psychol.*, 1926, 37, 427–428.—Judgments of the apparent warmth of colored objects show individual preferences of a fairly constant sort, but there are few significant and constant preferences common to the group. The outstanding exception is purple, which stands in the lowest position, probably due to its unpleasantness. The conclusion seems warranted that the apparent warmth of colors is sufficiently intrinsic to enter into a total configuration in such

a way as to modify judgments of tactual warmth.—*G. J. Rich* (Institute for Juvenile Research).

142. **Murchison, C.** *Mental test and other concomitants of some white women criminals.* *Ped. Sem.*, 1926, **33**, 521-526.—85 cases tended to score lower on the Alpha test than did 1,418 white men criminals in the same state (Ohio). They showed also a more limited range of offences, a larger percentage being confined for sex offences.—*J. F. Dashiell* (North Carolina).

143. **Murchison, C.** *Mental test and other concomitants of some negro women criminals.* *Ped. Sem.*, 1926, **33**, 527-530.—41 cases tended to score lower on the Alpha test than did 164 negro men criminals in the same state (Ohio). In types of crimes committed they were more similar to the latter than were white women to white men, very few being imprisoned for sex offences. They tended to be older than white women criminals.—*J. F. Dashiell* (North Carolina).

144. **Murdoch, K.** *Racial differences found in two American cities.* *Indus. Psychol.*, 1926, **1**, 99-104.—Report of investigations made in New York City and Honolulu with the Pressey Group Intelligence Test. In the New York group, Americans and Jews were highest and about equal, negroes next and Italians lowest. For the Honolulu work more races were tested, with both verbal and non-verbal tests, and moral traits were also considered. A 12-year-old group only was employed. Of this group the North Europeans and Americans were the most intelligent and the others followed in the following order: Chinese, American-Hawaiians, Japanese, Koreans, Chinese-Hawaiians, Portuguese, Hawaiians, Porto Ricans, Country Japanese and Filipinos. Ratings were also made for the social-economic factor on the Taussig Scale. Ratings were made for ambition, perseverance, trustworthiness, self-assertion, sensitiveness to public opinion and control of emotions. Certain racial differences were found for all of these. A study of the groups in which there was race crossing leads the author to believe that the offspring have mental abilities between those of the parent races but more nearly like those of the inferior race.—*S. W. Fernberger* (Pennsylvania).

145. **Platt, C.** *The riddle of society.* New York: Dutton, 1926. Pp. vii + 300.—The book is a treatise on social problems, especially the problems of delinquency and criminality. The author regards the individual as having inherited certain instincts, desires, and impulses which must be modified to meet the requirements laid down by social custom. The delinquent is regarded as one who has not adjusted himself to the social situation in an acceptable way, and who is in need of education rather than of punishment. Criminal acts are regarded as mistakes rather than willful desire to do wrong. The book contains chapters on the non-social, environment, the rich and the poor, puberty, the thief, the prostitute, the law, prison and punishment, reforms and reformers, the scientific basis for social endeavor, educating for the social life, and salvaging the delinquent.—*J. R. Liggett* (Clark).

146. **Schaub, E. L.** *The psychology of religion in America.* *Symposion*, 1926, **1**, 3, 292-314.—America now leads the world in the amount of scientific work on the psychology of religion—a fact recognized in several of the foreign countries. Divinity schools are offering more and more along psychological, and so scientific, lines. The psychology of religion is also affecting biography and literature (see Werner's "Brigham Young," Riley's "The Founder of Mormonism," etc.). Wide differences of viewpoint still exist, indicating the youth of the science. As an aid to further work, warnings are issued (1) against misconstruing data because of certain preconceptions; (2) against using one doctrine

as "a net within which to catch the whole of religious phenomena;" (3) against a too rigorous mechanism—a "psychologizing 'from without'"; (4) against assumptions which tend to isolate religion from life and block further research; (5) against conceiving religion in such narrow terms as to divorce it from general psychology, endocrine psychology, etc.; (6) against failure to give historical and environmental conditions their due in the formation of conclusions.—*P. R. Farnsworth* (Stanford).

147. **Snow, A. J.** An approach to the psychology of motives. *Amer. J. Psychol.*, 1926, 37, 129-131.—The only approach to the study of human motives is not in the abstract or general but in concrete situations. We must make concrete studies. We may, for example, enumerate a group of causes or motives for labor turnover. But even then statistics are lacking as regards the relative importance of most of the factors enumerated. Still better would be a series of concrete case studies, in which concrete individuals would be considered in specific situations. Only in some such way shall we ever be able to determine the relationship which exists between human reactions and their causes.—*G. J. Rich* (Institute for Juvenile Research).

148. **Swanton, J. R.** Notes on the mental assimilation of races. *J. Wash. Acad. Sci.*, 1926, 16, 493.—Specific cases are cited by reference to sources and by quotation which indicate that the factors tending to prevent assimilation of captured of one race by captors of another are: (1) the physical differences between them, and (2) knowledge that there was a difference in origin. The conclusion is regarded as tentative only, and should be verified by further work.—*D. B. Judd* (Bureau of Standards).

149. **Truitt, R. P.** Methods of preventing delinquency. *Arch. Neur. & Psychiat.*, 1926, 16, 613-619.—To prevent these personality and behavior difficulties the work should be started with children before they are misfits in colleges and industry and before they are brought to court or located in prison. The Division on Prevention of Delinquency of the National Committee for Mental Hygiene has utilized some of the methods formulated by Healy, Adler and Thom in demonstrating child guidance in cities throughout the country. Not much can be done about methods in preventing delinquency until it is recognized that the best methods will have to be evolved through fundamental modifications in educational methods, housing plans, social relationships, dealing with unassimilated aliens, court procedures, industrial organizations, etc. What is needed most to evolve methods of preventing delinquency is orientation in the methods of those fields which affect so vitally the adjustive possibilities of every person. The sources of delinquency are not in psychiatry itself, and if psychiatry is to be preventive it must penetrate those fields that are part of the normal life of every person.—*I. Rappoport* (Boston Psychopathic).

150. **Wallis, W. D.** Race and culture. *Scient. Mo.*, 1926, 23, 313-321.—Measurements of primitive peoples in simple and complex mental traits are hard to interpret, due to previous experience and habits and due to attitude toward examination. The army tests were standardized on Anglo-Saxon experience and do not suit the interest and training of, e.g., a Zulu. We have no reason to believe that one race differs from another in innate mental equipment, for the contribution of culture is enormous.—*J. F. Dashiell* (North Carolina).

[See also abstracts 25, 27, 28, 29, 30, 83, 87, 96, 101, 162, 165, 170, 176, 200, 204, 206, 212.]

INDUSTRIAL AND PERSONNEL PROBLEMS

151. [Anonymous.] **Suggested tests for carpenter.** *Pub. Pers. Stud.*, 1926, 4, 320-324.—The duties, qualifications, and compensation of carpenters are defined. Suggested tests of the objective types include (1) work, materials, tools, and processes; (2) understanding of literature relating to carpenter work; (3) interpretation of blue-prints; (4) Stenquist Mechanical Aptitude test; (5) education and experience. Total time required for tests, two and one-half hours. Arbitrary weightings for each part and a tentative scoring scheme are listed. No evidence as to reliability is given. Validity has not been tested experimentally.—*K. M. Cowdery* (Stanford).

152. **Bowden, A. O. A faculty self-rating system.** *School & Soc.*, 1926, 24, 527-528.—Each member of the faculty of the New Mexico State Teachers' College rated every other on a series of professional traits. A profile was then constructed for each instructor, and this was submitted to him together with the median, maximum, and minimum profiles of the total group. The device is said to have had a stimulating effect.—*H. L. Koch* (Texas).

153. **Bureau of Public Personnel Administration. The development of classification and compensation plans for the library profession.** *Pub. Pers. Stud.*, 1926, 4, No. 9.—(Entire number devoted to excerpts from report prepared for the Committee on the Classification of Library Personnel of the American Library Association. Full report to appear in book form.) Summarized findings of the survey indicate that library organizations vary in form more than differences in size, equipment, and types of service warrant; that workers in smaller libraries tend to lack minimum educational qualifications for efficient service; that compensation for similar duties varies widely but with general level lower than for equally trained workers in other fields; that a lack of development of professional standards based on careful analyses has resulted in unfortunate conditions in the profession as a whole. Recommendations are made that the classification and compensation plans developed by this study be adopted and enforced; that training organizations for the profession follow the standards proposed and encourage standard tests for the selection of qualified library workers. The aims, policies and procedure of the study are outlined according to recognized job-analysis methods, including personal interviews, questionnaires, and comparative analyses of intelligence test results. Tables of defined and classified titles of positions together with minimum qualifications for each, and advisable minimum, intermediate and maximum salaries are determined. Emphasis is laid on the facts that such an investigation is never a finished product and that a standing committee should be maintained to continue and revise the plans. Appendices include (1) the classification and compensation plans in outline, (2) comparison of existing and proposed titles and compensation in a typical public library, (3) rules for adopting, applying and administering the plans, and (4) sample detailed specifications.—*K. M. Cowdery* (Stanford).

154. **Hambrecht, G. P. Industrial rehabilitation of handicaps in Wisconsin.** *Occup. Therap. & Rehab.*, 1926, 5, 343-352.—The provisions of the Wisconsin industrial rehabilitation law are being carried out under the direction of the State Board of Vocational Education. They involve a personal call on the injured, plans for his physical restoration, reeducation and placement, and follow-up in his new job. The training follows as far as possible his former training. During the past year some 200 persons have been placed through this board. Jobs for the handicapped are sometimes difficult to find, but the well trained stand a better chance.—*H. E. Burt* (Ohio State).

155. **Kaiser, J. B.** A library personnel efficiency rating blank. *School & Soc.*, 1926, 24, 674-677.—A library personnel efficiency rating blank is presented. The blank is designed to aid in the evaluation of workers in the total field. A five degree scale is used in the rating, and the degrees are defined, apparently, in terms of frequency values corresponding to sigmas of a normal distribution curve.—*H. L. Koch* (Texas). v9

156. **Kitson, H. D.** Relation between age and promotion of university professors. *School & Soc.*, 1926, 24, 400-404.—Dr. Kitson has studied for Columbia University and the University of Chicago the rate of progress through the four academic ranks of men who were full professors in the year 1925-1926. Eleven years is required on the average at Columbia for the rise from instructor to professor; thirteen, at Chicago. The professorship is reached four years earlier by men called from other institutions than by those who start as instructors in the two universities under discussion. The promotion rate of women is markedly below that of men.—*H. L. Koch* (Texas).

157. **Knight, F. B., Ruch, G. M., Bathurst, J. E., & Telford, F.** Standardized tests for elementary teacher. *Pub. Pers. Stud.*, 1926, 4, 279-298.—Present difficulties in measuring teaching ability include lack of standards as to what constitutes successful teaching and lack of satisfactory methods of determining that part of changes in pupils attributable to teachers. By cooperation between the College of Education, State University of Iowa, and the Bureau of Public Personnel Administration, a battery of ten tests has been standardized. As a result of giving to 281 teachers independently rated as to professional training and teaching efficiency, the predictive values of six aptitude tests were determined as ranking in the following order: social information, theory and practice of teaching, school and class management, professional information, reading comprehension, professional judgment. Four subject placement tests in reading, arithmetic, spelling, and writing, were given to 169 elementary teachers enrolled in the State University of Iowa. Reliabilities were found as follows: criterion .803, aptitude test battery .779, subject placement tests .856. The correlation of aptitude test battery with estimates of success was .414; corrected for attenuation, .524. The correlation is relatively low due to the homogeneity of the tested group. The predictive value of these aptitude tests is twice that of the traditional bases of estimating fitness for teaching. In determining success social ability and judgment apparently have higher importance than abstract intelligence or professional judgment.—*K. M. Cowdery* (Stanford). v9

158. **Mellum, H. J.** Employment of the handicapped. *Occup. Therap. & Rehab.*, 1926, 5, 335-342.—Many state jobs might well be given to the handicapped rather than constituting a reward for political assistance. Nash Motors puts the disabled back at work as soon after the accident as possible in order to encourage him, and advances him in regular employment as rapidly as his recovery permits. The program of vocational rehabilitation involves (1) the selection of a suitable occupation, (2) preparation for that occupation and (3) follow-up of the person in that occupation. There have been instances where the person so placed earned more than before the injury.—*H. E. Burt* (Ohio State).

159. **Snow, A. J.** Tests for chauffeurs. *Indus. Psychol.*, 1926, 1, 30-45.—Records the first part of an article describing the tests for chauffeurs used by the Yellow Cab Company in Chicago. Both the forms and data of results are given. The present paper is largely concerned with a discussion of the job requirements, study of accidents and the attitude and cooperation of the company.—*S. W. Fernberger* (Pennsylvania). v9

[See also abstracts 117, 130, 136, 198.]

CHILDHOOD AND ADOLESCENCE

160. Benson, E. Are children people? A child's thoughts on the age-old feud between children and grown-ups. *Vanity Fair*, September, 1926, 60 ff.—Written by a girl of twelve (who at the age of eight established the world's record with an intelligence quotient of 214 on the Binet-Simon scale) presenting a child's frank opinion of her elders and "betters." Not only are adults patronizing to children; they are also unjust. Punishment of children often means a vent to the parents' ill temper; still more often is it a reflection of the way those parents were treated in their childhood. Children's sensitivity to the attitudes of parents is evidenced in their imitative "mamma-papa" games.—A. L. Allport (Dartmouth).

161. Brill, A. A. Psychotic children; treatment and prophylaxis. *Amer. J. Psychiat.*, 1926, 5, 357-364.—A study of the development of a group of psychotic children into adult life. The writer concludes from an extended study of cases extending in many instances to a period of 15 years "that in a certain constitution the development of a neurosis or psychosis is simply a question of environment; that the time has come when one may speak about mental and emotional tendencies for psychoses and neuroses and have in mind children who, unless properly adjusted, will in all probability develop psychoses and neuroses; and that such tendencies manifest themselves in preponderating schizoid or syntonetic reactions in the sense of Kretschmer and Bleuler." For treatment he suggests the psychoanalytic approach, differing, however, from the analysis of adults in that the parents receive instruction and they in turn carry out the treatment. The writer reports favorable results in the analysis of his cases by following the model of Freud's *kleiner Hans*.—E. Beckwith (Boston Psychopathic).

162. Cox, C. M. Genetic studies of genius. II. The early mental traits of three hundred geniuses. Stanford University: Stanford University Press, 1926. Pp. xxiii + 842.—The study proper is confined to Part I, pp. 1-219. It constitutes a companion volume to "The Mental and Physical Traits of One Thousand Gifted Children" (1925). The purpose of the latter, in the broadest terms, was to determine the degree of eminence attained by children showing high intelligence-test abilities; that of the present study is the converse—to estimate the most probable mental-test abilities in childhood of persons who attained eminence. The subjects were chosen from the top of Cattell's list of eminent men; i.e., the ultimate criterion, subject to some modifications, was the amount of space devoted to the subject in biographical dictionaries. The data were collected from about 1,500 sources, chiefly encyclopedias, biographical dictionaries, and biographies. No attempt was made, apparently, to estimate the trustworthiness of these particular data; Woods' three checks—(1) the agreement of historiometric and anthropometric family coefficients of resemblance, (2) agreement among three sources in terms of birthplaces of distinguished Americans, (3) agreement between encyclopedias, modern critics, and Athenians on the relative fame of Euripides and Sophocles—are accepted as sufficient guarantee for the accuracy of the present data on the childhood of great men. Three expert mental testers reviewed the voluminous data so gathered, and gave independent estimates of the I. Q. (conceived as an ideal measure) necessary to explain the recorded performances. A number of secondary matters, e.g., groupings of I. Q. estimates by nationality, field of later achievement, etc., are exhaustively treated. The intercorrelations of the raters are all close to .72. They maintained a reliability (correlation with re-rating, interval eight weeks) of about .80. The data

themselves were rated on a seven-point scale for reliability, and these point ratings were converted to reliability coefficients by a similar rating of variously incomplete Stanford-Binet tests. Since the raters, by instruction or agreement, were conservative in cases of marked incompleteness of data, the I. Q.'s were found to correlate .77 with the reliability of the data. It is therefore concluded that the true I. Q. for the group, however measured, is substantially above the estimated ratings. A correction was devised to allow somewhat for this fact. Analyses of the I. Q. ratings occupy Chapters 6 to 10; the purpose of these seems to be to present characteristics of the sub-groups and illustrate them with individual performances. Chapter 11 is devoted to character ratings. These were made on a seven-point scale on 67 "good" traits, for one hundred representative cases for whom the data were of more than average completeness. The ratings were made by the writer and one assistant, whose reliabilities were measured by correlations (between first and second ratings of the same cases) of .80 (8 cases) and .76 (4 cases). The reliability coefficient of the trait rating itself was measured by the correlations between the two raters; these values ranged from .13 to .83, average .53. Exhaustive analyses of the significance of these ratings occupies Chapter 12. The most general character finding is a striking superiority in traits exhibiting strength of character, activity, mental power, persistence, and self-reference. Chapter 13 summarizes the total conclusions in five pages; the most significant is (p. 218) that "the extraordinary genius who achieves the highest eminence is also the gifted individual whom intelligence tests may discover in childhood." Part II, Chapters 14 to 24 (pp. 223-741), is devoted to condensed case studies. As reference points the following I. Q. estimates may be cited, with appropriate coefficients of reliability of data: La Fontaine 100, .43; Raphael 110, .11; Garibaldi 120, .43; Spinoza 130, .20; Schiller 140, .60; Descartes 150, .53; Pitt (the younger) 160, .75; Voltaire 170, .75; Bentham 180, .82; Mill 190, .82. Appendix I gives a case study in full, that of Schelling. Appendix II (pp. 761-815) contains excerpts from the early writings of young geniuses, selected and arranged by Professor L. M. Terman.—*R. R. Willoughby (Clark)*.

163. **Kawin, E.** *The pre-school child.* *Welfare Mag.*, 1926, 17, No. 9, 7-23. —Experience with the problems of maladjustment found in adults and adolescents leads to the belief that in most cases their foundations are to be found in the very early years of life. A recognition of this fact has led to a program for the psychiatric and psychological study of children in three nursery schools. In addition to the clinical service which has been rendered, a program of research has been inaugurated. The field is too new to permit the formulation of exact scientific problems. The investigations now in progress are concerned with the reaction of young children to difficult test problems, the emotional reactions of young children, and the effect of rickets on learning ability.—*G. J. Rich (Institute for Juvenile Research)*.

164. **Kenworthy, M. E.** *Psychoanalytic concepts in mental hygiene.* *Family*, 1926, 7, 213-223.—All the experiences which come to an individual may be classified according as they are constructive in the sense of being of value for a progressive growth toward stable adult integration, or destructive if they have the obverse effect. The entire history of a child may be analyzed from this point of view, and each experience put into its proper setting. It then becomes the problem of the mental hygienist to determine for that individual the value of different types of behavior and select the environmental factors which will lead to integration and avoid regression toward infantile reactions.—*G. J. Rich (Institute for Juvenile Research)*.

165. Lewis, N. D. C. **The psychoanalytic approach to the problems of children under twelve years of age.** *Psychoanal. Rev.*, 1926, 13, 424-443.—The present paper, read before the Washington Psychoanalytic Society, considers the necessity and methods of handling deviations in children while they are forming; and presents illustrative material. In conclusion several constructive propositions are noted, the tendency of which is to stress examination of mechanisms rather than end results, and the placing of persons in charge of child hygiene clinics who are psychiatrically, or preferably psychoanalytically, trained.—*R. R. Willoughby (Clark).*

166. Mearns, H. **The conservation of youth power.** *Prog. Educ.*, 1926, 3, 207-213.—A plea for more freedom for youth in the schools, with cases of children labelled "poor in English" who were really victims of school-room repression. Examples of verse written by children in free environments show in many cases unconventionality, impudence, lack of taste, together with a sense of beauty and facile use of language. The author advocates a freedom to err as a necessary stage in the development of mature standards.—*A. L. Allport (Dartmouth).*

167. Meyer, A. E. **The lies that children tell.** *Scient. Mo.*, 1926, 23, 519-528.—The causes of the child's lie are fear (the greatest), lively imagination, make-believe mimicry, and weakness of will. Pseudo-lies must be distinguished from a conscious and deliberate deception for a definite purpose. Parents should remember that prevention is better than cure; and should be careful always to be truthful themselves before the child, to avoid over-severity of punishment, to avoid excessive catechizing.—*J. F. Dashiell (North Carolina).*

168. Perkins, F. J. **The relation of dentition to mental age.** *Ped. Sem.*, 1926, 33, 387-398.—555 pupils of the Chicago schools referred for psychological examination because of maladjustment in the grades were given the Stanford-Binet examination and an inspection of teeth. Results plotted graphically indicate that the eruption of permanent teeth more nearly parallels chronological age than mental age, although there is enough correlation between it and the latter to warrant an indication of mental retardation in extreme cases of delayed dentition.—*J. F. Dashiell (North Carolina).*

169. Piaget, J. **The language and thought of the child.** New York: Harcourt, Brace, 1926. Pp. xxiii + 246.—A work, the purpose of which is to attempt to answer the question, "What are the needs which the child tends to satisfy when he talks?", based upon careful observations of the language of various children between the ages of 3 and 11. The observations were carried out at the Maison des Petits de l'Institut Rousseau under as nearly natural conditions as possible. In Chapter 1 a record is given of the spontaneous talk of each of two 6½-year-old children. The sentences of the children were classified into categories: repetition, monologue, collective monologue, adapted information, criticism, commands and threats, answers. Chapter 2 records the same kind of experiment upon a group of children, 20 in all, between the ages of 4 to 7. The conclusions drawn from the two experiments are the same: egocentric language, together with lack of coherence and system in thinking, seems to predominate in children of the age studied. Chapter 3 treats of the problem, "When children talk together, do they understand one another?" The experiment, made upon a group of children aged 4-7, consisted in having one child tell or explain something to another who reproduced what he had heard. In checking up the data a distinction was made between implicit and explicit understanding on the part of the child; between the understanding of the explainer in relation to the adult and of the reproducer in relation to that of the explainer. Coefficients were obtained for each of the relations. Roughly the conclusion

drawn from the experiment is that children do not genuinely understand each other, or even desire to do so, before the age of 7, when thinking begins to be social. The author stresses, as one of the most important manifestations of the egocentrism of children under 7, and present later in those of the individual's thoughts which are hidden from immediate observation, the mechanism of syncretism, or the unanalytic and subjective "fusion of entirely disparate elements." For the purpose of observing one of the experiences of syncretism a proverb test was given to children of 9, 10, and 11. The subject, given a number of proverbs and 12 sentences, 10 of which expressed the same ideas as were expressed in the proverbs, was told to find sentences which fit the proverbs. The relations which the children created between the sentences and the proverbs were noticeably syncretistic rather than objective. Syncretism is discussed rather fully—its effect upon child thought, its relation to pathological interpretation, autistic imagination, and logical thought. The problem in Chapter 5 was that of trying to determine a child's intellectual interests through 1,125 spontaneous questions asked over a period of 10 months by a child 6 years old. The questions were classified according to the sort of answer which the child apparently expected to receive. The conclusions reached correspond to those in the earlier chapters.—*M. G. Willoughby (Clark)*.

170. **Regensburg, J.** Emotional handicaps to intellectual achievement in supernormal children *Ment. Hygiene*, 1926, 10, 480-494.—A considerable number of children of supernormal intelligence fail to reach the full promise of their potentialities because of social and emotional lack of adjustment. Among gifted children there appear to be three strategic points at which adjustment may fail: the time of admission to elementary school; entrance into junior high school; and admission to senior high school, if directly from the eighth grade. At each of these times, the child meets with decreased supervision and increased responsibilities. If he is advanced because of his intellectual abilities, he meets the new responsibilities without sufficient emotional maturity to cope with them. Various mechanisms are utilized by children in these situations to meet their emotional problems, many of which result in failure in school as well as the appearance of behavior problems.—*G. J. Rich (Institute for Juvenile Research)*.

171. **Taft, J.** Closed doors and the key to them. *Survey*, 1926, 56, 613-616.—The school offers what opportunities it has to children with varying hungers and resistances, for them to seize or reject as their own inner determinations impel. But there is now a rapidly growing body of knowledge regarding the nature of the child, the dynamics of behavior, the way in which particular attitudes, interests, habits are conditioned by the earliest experiences, which throws much light upon the way a child takes school and why. Only the nursery school, which has no curriculum, is actually beginning to use this newer kind of psychology effectively.—*G. J. Rich (Institute for Juvenile Research)*.

[See also abstracts 101, 111, 128, 132, 134, 176, 178, 200, 202, 204, 206.]

EDUCATIONAL PSYCHOLOGY

172. **Buswell, G. T., & John, L.** Diagnostic studies in arithmetic. *Sup. Educ. Monog.*, 1926, No. 30.—In an investigation of the methods employed by school children in performing the four fundamental operations of arithmetic, three separate techniques were employed: (1) An analysis of eye movements during column addition. A photographic apparatus similar to that which has been employed for the study of eye movements during reading was used, and the location, number and duration of fixation points noted. The performances of

individuals of varying degrees of efficiency in addition are compared by means of tables and graphs. (2) A time analysis of the four fundamental operations was made by having the child work his examples orally and speak his partial answers into a telephone transmitter which was connected with a dictaphone. By subsequent transcription on kymograph paper it was possible to secure a record of the time which elapsed between the successive steps in the computation. (3) On the basis of material gained through individual diagnostic studies of several hundred school children, a catalogue of work habits was prepared for the use of classroom teachers without special laboratory training or facilities. The authors state that by the aid of this catalogue the teacher can, in most cases, identify the habits exhibited by any particular pupil in her class, and can make a more complete diagnosis in fifteen minutes than could otherwise be made in several hours. Attention is called to the fact that the ordinary type of diagnostic test in which the nature of the error is inferred from the answers given to particular types of examples is frequently misleading, since a given error may be the result of any one of a number of undesirable habits, and correct answers may be obtained in spite of very inefficient methods. The habit catalogue and pupil's work sheet together with instructions for their use are included in the monograph.—*F. L. Goodenough* (Minnesota).

173. **Crawford, C. C.** *Some comparisons of freshman boys and girls.* *School & Soc.*, 1926, 24, 494-496.—The intelligence-test scores, scholastic grades, study habits, attendance records, and extra-curricular work load of college-freshman boys and girls are compared. The girls accomplish as much in the way of self support as do the boys, while at the same time they study more, attend classes more regularly, and make better grades in all subjects with the usual exception of mathematics. The intelligence-test performance of the two shows some qualitative differences but results highly similar in mere quantitative totals.—*H. L. Koch* (Texas).

174. **Ellis, R. E.** *The correction of constant errors in college marks.* *School & Soc.*, 1926, 24, 432-436.—The paper presents statistical data on the variations in marks given by different instructors and different departments in Syracuse University, the variations being evaluated in terms of the psychological test scores and the marks made in the freshman year by the members of the different classes. A method is suggested whereby, with the aid of the psychological scores and freshman marks, the grading standards of instructors can be rendered more nearly uniform. The method, while assuming that marks should distribute so as to conform in a general way to the normal probability curve, meets the objection usually advanced to such a procedure—i.e., that selective factors operate to make some classes more intelligent than others.—*H. L. Koch* (Texas).

175. **Gates, A. I.** *A study of the rôle of visual perception, intelligence, and certain associative processes in reading and spelling.* *J. Educ. Psychol.*, 1926, 17, 433-445.—What relation have various types of perception (a) to each other, (b) to reading and spelling, and (c) to intelligence? In investigating this problem Gates used five sorts of tests: (1) visual perception, e.g. encircling pairs of geometrical figures not alike; (2) capacity in associative learning; auditory-visual association; (3) capacity in associative learning; visual-visual association; (4) capacity for general linguistic and abstract learning; (5) tests of reading ability; (6) tests of spelling ability. These tests were given to 310 school children in grades I to VI. Perception of one kind seems to be unpredictable from perception of another kind, for between the various types of perception the average r is only .35. Perception of words is a separate function and can be prophesied only with tests similar in form and content. "Of the several abilities studied, the termed 'word perception' is most closely associated with achievement in

reading and spelling. Intelligence yields the next highest correlation whereas tests of perception of geometrical figures of different sorts and digits, of associative learning of visual and auditory symbols, or of visual and visual symbols show but slight association with these school abilities."—A. M. Jordan (North Carolina).

176. **Gesell, A.** **Experimental education and the nursery school.** *J. Educ. Res.*, 1926, 14, 81–87.—The nursery school is not a new idea; we find mention of it in Plato, and one was actually started in 1826 by Robert Owen. The author outlines five types of problems which should be studied in the nursery school. These are: (1) individual differences; (2) mental hygiene of stimulation and fatigue; (3) norms of personal-social behavior; (4) personality factors in education; and (5) methods of parental guidance.—S. W. Fernberger (Pennsylvania).

177. **Good, C. V.** **The effect of mental-set or attitude on the reading performance of high-school pupils.** *J. Educ. Res.*, 1926, 14, 178–186.—The Thorndike-McCall Reading Scale was given to the freshman class of a Chicago high school. By instructions the experimenter attempted to create attitudes of encouragement, skimming, discouragement and reproduction. The fifth form had been given for comparison without an induced attitude. Only 13 pupils were present for all of the five tests. Skimming and reproduction increased the scores and skimming lowered them.—S. W. Fernberger (Pennsylvania).

178. **Gowen, J. W., & Gooch, M.** **The mental attainments of college students in relation to the preparatory school and heredity.** *J. Educ. Psychol.*, 1926, 17, 408–418.—The paper is based on the college freshman and high school records of 927 of the graduates of the University of Maine. By the use of Harris's method of correlation of intra-class and inter-class coefficients of correlation it was possible to determine the influence of the large high school, the small high school, and the academy upon standing in college. It was shown that no reliable difference existed between the records of these three groups. For all pairs of siblings the correlations ran from .413 to .152. Authors conclude that the high school has little or no influence upon the performance of the individual in college but that heredity is the preponderant factor.—A. M. Jordan (North Carolina).

179. **Graham, G. M.** **A laboratory course in straight thinking.** *School & Soc.*, 1926, 24, 658–662.—The author describes her success with a course in which university students were given the opportunity of analyzing the rational structure of materials gathered from many widely different fields. Because of the great variety of the materials employed marked transfer effects were evident. The author feels that the course justifies itself as one of the basic ones in the college curriculum.—H. L. Koch (Texas).

180. **Harlan, C. L.** **Size of class and types of instruction.** *J. Educ. Res.*, 1926, 14, 120–125.—Many recent studies indicate that the size of the class has little effect on the efficiency of instruction. The author points out that this is probably true in a certain type of subjects, which require large amounts of practice and a minimum of instruction, such as arithmetic, physical education, music and drawing. For subjects requiring a great deal of instruction, such as history, geography, physiology, literature and elementary science, the author doubts if these findings will prove to be true.—S. W. Fernberger (Pennsylvania).

181. **Kirk, J. G.** **Handwriting survey to determine grade standards.** *J. Educ. Res.*, 1926, 13, 259–272.—Ayres Scale applied to 2,000 specimens of handwriting from students in universities and high and grade schools and from employees in 16 firms with a wide distribution of jobs. All of the specimens were

judged by 20 individual judges. Quality 60 is sufficient for social purposes; 70 should be reached by all who wish to engage in commercial pursuits. In the schools the standard 60 should be required for grade 6-B, while quality 70 should be required for grade 8-B.—*S. W. Fernberger* (Pennsylvania).

182. **Miles, D. H.** Can the high school pupil improve his reading ability? *J. Educ. Res.*, 1926, 14, 88-98.—Results of tests on 331 pupils in the New York high schools. Terman Group Test and Thorndike-McCall Reading Scale were used. Bright pupils, because of their ability in reading at the start, do not ordinarily improve from daily reading practice. Slower pupils are likely to improve if the teacher can maintain effort and interest. Because of the close relation between intelligence and comprehension in reading, the pupils who stand high are apt to lose interest in the drills. The authors believe, however, that the extent of improvement depends on the teacher.—*S. W. Fernberger* (Pennsylvania).

183. **Pressey, L. C.** Proficiency in silent reading. *School & Soc.*, 1926, 24, 589-592.—Fifty-six children paired on the basis of age, sex, and intelligence but differing in reading ability by as much as two grades were tested for number of eye fixations a line of reading matter, number of regressive movements, accuracy of attack on the initial word of a line, amount of lip movement in silent reading, comprehension in both oral and silent reading, mispronunciation, and ability to pronounce new words. The good readers excelled in all of the tests. The author suggests techniques for remedial instruction.—*H. L. Koch* (Texas).

184. **Weber, O. F.** Methods used in the analysis of text-books. *School & Soc.*, 1926, 24, 678-684.—Eight different methods of text-book analysis are described and criticised. The lines of progress in the technique are in the direction of summation of judgments, objectivity in analysis, and the objective weighting of qualities in terms of their importance for general social as well as class-room needs.—*H. L. Koch* (Texas).

185. **Witty, P. A.** Diagnosis and remedial treatment of poor spellers. *J. Educ. Res.*, 1926, 13, 39-45.—Examination of a number of cases of bad spelling with a careful check of the possible sensory defects, intelligence rating and the Thorndike-McCall Reading Test. The spelling was tested with the Buckingham Revision of the Ayres Spelling Scale. A diagnostic outline of underlearned and incorrect spelling habits was used and is given in the article. A test period was given at the beginning and at the end of the experiment, and, during the ten weeks intervening, each child was given individual instruction in spelling. The gain in mean score for the group was from 61 per cent. to 85 per cent. Several case studies are given.—*S. W. Fernberger* (Pennsylvania).

[See also abstracts 90, 152, 163, 166, 170, 171, 190, 194, 200, 201, 202, 204, 206.]

BIOMETRY AND STATISTICS

186. **Boring, E. G.** Scientific induction and statistics. *Amer. J. Psychol.*, 1926, 37, 303-307.—A statistical result may be derived from so limited a sample that no general induction from it is meaningful. An induction that may be made seems valid only so long as one lacks the ingenuity to think of some possible uncontrolled factor that would make it invalid. In this sense the psychologist must always evaluate his statistical results before making his final induction. Evaluative departure from the statistical findings should always go in the direction of conservatism. We should be less positive than the statistics warrant, never more positive. The trouble is that, in making a general induction, our

knowledge of all the possible causes of variation is never even nearly complete. The safe plan is to combat ignorance of conditions with caution.—*G. J. Rich* (Institute for Juvenile Research).

187. **Culler, E.** *Studies in psychometric theory. XI. The effect of practice on the distribution of judgments. XII. On the T-method: a procedure for finding the trend of any series of numbers.* *J. Exper. Psychol.*, 1926, 9, 169–194.—Considerable space has been devoted recently in psychophysical literature to the question as to whether differential judgments approximate more and more closely, with increase of practice, the normal percentile curve. The first of the present articles points out that h (measure of precision and index of differential sensitivity) and P (symbol for goodness of fit of differential judgments to phi-gamma hypothesis) will not correlate perfectly. When h is high, P must also be high. But when h is low, P may be either high or low. In actual practice P is always high, when h is low, if the observers have had considerable general training in making psychophysical judgments. If an observer is untrained P may begin low but always improves (i.e., approximates more nearly the normal curve) as practice proceeds. When P begins high it remains high, since there is little room for improvement in such a case. In the second article the writer explains by means of concrete examples the use of a simple and convenient device for analyzing any body of statistical material. "Its cardinal advantage over the common modes of treatment lies in its generality, its universal applicability; it can be used with all manner of distributions, though they depart widely from the gaussian form; the question of 'normality' does not arise."—*C. C. Pratt* (Harvard).

188. **Eells, W. C.** *A plea for a standard definition of the standard deviation.* *J. Educ. Res.*, 1926, 13, 45–52.—A summary is given of the different definitions of the standard deviation found among educators, biologists, pure mathematicians and economists, which shows that the definitions are various and mean very different things. The author concludes that the definition of Karl Pearson, which is almost universally accepted by all except psychologists and educators, should be accepted inasmuch as it has certain advantages over the other definitions.—*S. W. Fernberger* (Pennsylvania).

189. **Harmon, G. E.** *On the degree of relationship between head measurements and reaction time to sight and sound.* *Biometrika*, 1926, 18 (1 + 2), 207–220.—[For a companion study of this correlation in female subjects see No. 191.] The data of this investigation consisted of groups of 4,686 to 5,564 males of all ages from Francis Galton's Second Anthropometric Laboratory Series. The head measurements were corrected to a standard age of 40.5 by the method described by Holzinger (*Biometrika*, 16, p. 140). The reaction times were taken by the method of Koga and Morant (*Biometrika*, 15, p. 347). For the reaction time measures (in 100th's of a second) the means, standard deviations, coefficients of variation, and populations were as follows:

	Mean	Standard Deviation	Coefficient of Variation	N
Reaction time to sight	18.774	3.570	19.016	5564
Reaction time to sound	15.583	2.984	19.149	5563

The correlation coefficients, correlation ratios (of reaction time on head measurements) and populations were as follows:

	<i>r</i>	<i>r</i> _{t.A}	<i>N</i>
Head breadth, reaction time to sight	-.0420 ± .00903	.0743	5564
Head length, reaction time to sight	-.0337 ± .00984	.0677	4690
Cephalic index, reaction time to sight	-.0079 ± .00984	.0828	4690
Head breadth, reaction time to sound	-.0486 ± .00902	.0929	5563
Head length, reaction time to sound	-.0526 ± .00983	.0862	4686
Cephalic index, reaction time to sound	-.0049 ± .00985	.0708	4686

Means, standard deviations and coefficients of variation for all measures, and the scatter diagrams for all correlations were presented in full. "Comparing with Musselman's results, we see that there is very little difference between male and female reaction times, the male being slightly quicker than the female. . . . As far as the mental element in reaction time is concerned, the view taken by previous biometric writers is confirmed, namely that the size and shape of the head have little if any association with the working of the brain."—*L. Ackerson* (Institute for Juvenile Research).

190. **Holzinger, K. J., & Freeman, F. N.** Rejoinder on Burt's regression equation. *J. Educ. Psychol.*, 1926, 17, 384-386.—The authors agree with Thomson on the theoretical interpretation of the regression equation, but disagree in some important particulars. Viz., Thomson argues that the school work assists the child to answer Binet's questions, but it is just as reasonable to suppose that the quality of school work is a function of the ability measured on the Binet scale. The authors also show that the Binet test is a better predictor of the quality of school work than the Burt test.—*A. M. Jordan* (North Carolina).

191. **Musselman, J. R.** On the correlation of head measurements and mental agility. *Women. Biometrika*, 1926, 18 (1 + 2), 195-206.—[For a companion study of this correlation in male subjects see No. 189.] Previous students of the correlation of head measurements with intelligence have reported conflicting results, those from the Biometric Laboratory finding "only the smallest correlation" while "other investigators, especially in Germany, without using any adequate correlation method have asserted that there is such a relation." The data consisted of groups of 1,669 to 1,835 females between the ages of 3 and 76 in Francis Galton's Second Anthropometric Laboratory Series measured during the years 1880 to 1890. The head measurements were corrected to a standard age of 40.5 (by a method which the author did not describe). The measures for "mental agility," here represented by reaction times to sight and sound, were made by a method ascribed to Koga and Morant (*Biometrika*, 15, p. 346). For the reaction time measures (in 100th's of a second) the means, standard deviations, coefficients of variation and populations were as follows:

	Mean	Standard Deviation	Coefficient of Variation	<i>N</i>
Reaction time to sight	19.350	3.6796	19.02	1834
Reaction time to sound	15.822	3.1962	20.20	1835

The correlation coefficients, correlation ratios and populations were as follows:

	<i>r</i>	<i>W.A.</i>	<i>N</i>
Head breadth, reaction time to sight	-.0353 ± .0157	.0649	1834
Head length, reaction time to sight	-.0377 ± .0165	.1049	1675
Cephalic index, reaction time to sight0161 ± .0165	.0567	1669
Head breadth, reaction time to sound	-.0787 ± .0156	.1193	1835
Head length, reaction time to sound	-.0188 ± .0165	.1058	1676
Cephalic index, reaction time to sound	-.0112 ± .0165	.0608	1670

Means, standard deviations and coefficients of variation for all measures, and the scatter diagrams for all correlations were presented fully. "In conclusion, while there is a small amount of correlation between head breadth and reaction time to sound, its intensity is so slight as to be of no prognostic value. In all other cases the intensity of correlation is of no significance. . . ."—*L. Ackerson* (Institute for Juvenile Research).

192. **Symonds, P. M.** Variations of the product-moment (Pearson) coefficient of correlation. *J. Educ. Psychol.*, 1926, 17, 458-469.—Fifty-two variations of the product-moment (Pearson) method for computing the coefficient of correlation are presented with recommendations for each. Furthermore, seven printed forms (those of Ruger, Toops, Otis, Kelley, Thurstone, Holzinger, and Ruch-Stoddard) for the facilitation of the computation of the coefficient of correlation are described and their advantages and limitations listed. The author prefers Thurstone's form because he likes Thurstone's method for finding $\Sigma x'y'$. The article ends with a brief account of the historical development of the theory of correlation. He points out that sometimes workers rediscover what is already discovered. For example, Harris, Thurstone, and Ayres derived independently and in the chronological order named the formula for computing the coefficient of correlation when zero is the assumed mean.—*A. M. Jordan* (North Carolina).

193. **Willson, G. M.** Standard deviation versus age as a score unit. *J. Educ. Res.*, 1926, 13, 189-196.—Mental or educational age is often a misleading unit for the purpose of comparing an individual's score on one test with his score on another test. A more significant comparison can be made by expressing each score as a deviation from the mean score of the individual's age group.—*S. W. Fernberger* (Pennsylvania).

[See also abstract 205.]

MENTAL TESTS

194. **Anderson, J. E., & Spencer, L. T.** The predictive value of the Yale Classification Tests. *School & Soc.*, 1926, 24, 305-312.—Correlations are computed between academic grades for four undergraduate years and three measures of ability available early in the student's scholastic career: viz., (1) scores amassed on the Yale Classification Tests, which are modelled upon the Army Alpha, (2) grades made on entrance examinations of the fifteen-subject type (old plan), as well as (3) on the four-subject comprehensive (new plan). All of the correlations are of the same order: +.30 to +.40. The percentile scores of the Classification Tests, however, show a relationship of a more regular and reliable nature with the chances of obtaining the bachelor's degree in arts, philosophy, or science than do those of the entrance examinations. Among the considered measures of the probability of graduation, the best single one is the average grade at the end of the freshman year.—*H. L. Koch* (Texas).

195. Bayley, N. Performance tests for three, four, and five year old children. *Ped. Sem.*, 1926, 33, 435-454.—Eight performance tests were arranged and given to 90 children aged from 2 years 7 months to 6 years 8 months. They included: a simple form board; auditory memory for digits; visual memory for mounted objects exposed in turn in an aperture; series of pictures in various stages of completion; objects in a toy house to be named; directions concerning simple objects shown; sorting counters; a simple manikin. Correlations between the individual tests and Stanford-Binet ranged from .53 to .82; between the whole battery and the latter, .90. The tests were interesting to the children, and consumed only 20 minutes.—J. F. Dashiell (North Carolina).

196. Current, W. F., & Ruch, G. M. Further studies on the reliability of reading tests. *J. Educ. Psychol.*, 1926, 17, 476-481.—One hundred fifty-four children distributed almost equally throughout Grades IV to VIII were tested with six reading tests in order to discover (a) the reliability of each test and (b) the interrelations between tests. These tests were as follows: Monroe's Standardized Silent Reading Test, Courtis's Silent Reading Test, Stanford Reading Test, Thorndike-McCall Reading Scale, Lippincott-Chapman Reading Test, and Haggerty Reading Examination. In all cases save the Lippincott-Chapman Test two forms were given. By using the best known measure of reliability the Stanford test proved to be by far the most reliable ($r = .93$). The reliability of the tests ranged from .71 to .93. It would seem that 30-40 minutes are necessary for measuring silent reading reliably because the tests requiring fewer minutes than 30 are not sufficiently reliable for practical purposes.—A. M. Jordan (North Carolina).

197. Gundlach, R. The effects of practice on the correlations of three mental tests. *J. Educ. Psychol.*, 1926, 17, 387-401.—The author reviews critically the findings of other investigators on this subject. He finds fault particularly with Hollingworth's study of the effects of the repetition of a test upon correlation. Hollingworth's conclusions are not justified because (a) he used the same material each time, and (b) his assumption of general ability is unproven because he measured intelligence with seven "speed" tests. The experiment here reported consisted in testing 39 college students twenty-five times on different forms of three tests: hard number-series, completion, cancellation tests, multiplication, and the college intelligence tests. The dispersion of the group remained practically constant throughout the practice. Extensive practice increases the correlation of number-series with cancellation, and, to a less extent, of number-series with multiplication; but not the correlation of cancellation and multiplication. Five totals for each test, five trials at a time, correlate practically without change with a criterion of intelligence.—A. M. Jordan (North Carolina).

198. Hannig, W. A. The relative worth of short answer and free answer material in elementary teacher tests.—*Pub. Pers. Stud.*, 1926, 4, 277-278.—Correlations between ratings by teacher training schools and teaching-license examinations in the form of four-hour free answer type, one-hour true-false, and one-hour completion tests warrant conclusions that a one-hour short answer test gives results about as reliable as a four-hour free answer examination. The total of scores of all three types gives better results than scores from any one of them. Short answer tests give greater range of material and higher speed in scoring. Free answer tests allow opportunity to judge prospective teachers' ability in extended original written discourse, in habitual use of good English, and to organize subject matter.—K. M. Cowdery (Stanford).

199. Hanumantha Rao, G. H., & Gopalaswami, M. V. The chance factor in intelligence tests of the selective type. *Psychol. Stud. Univ. Mysore*, 1926, 1, 29-46.—This is a research sponsored by the Education Board of Mysore to estimate

the effect of "chance" (identified with guessing) in determining score on four-response group tests. (The assumption is made throughout that this is not to be allowed for in the scoring procedure in the manner usual in America.) The total deviation, per element or "question," of the obtained frequency from a theoretical chance frequency for the group tested, constitutes an index (multiplied where convenient by the number of elements) which increases as the chance influences decrease. This index is used to compare locally available groups, and it is shown that the chance effect so measured decreases with increasing maturity and intelligence. This is partly corroborated by showing that in a re-test, adults change wrong answers to right about twice as often as vice versa, whereas children change in both directions with equal readiness. Dividing the questions into "easy," "crucial," and "difficult" on a basis of numbers answered correctly, it is shown that it is in the "crucial" range that the chance element is most operative. Further contributions relative to the respective merits of "selective" (multiple-response) and completion type tests are promised.—*R. R. Willoughby* (Clark).

200. **Hildreth, G.** Stanford-Binet retests of 441 school children. *Ped. Sem.*, 1926, 33, 365-386.—A continuation of work by Rugg and Colloton (*Jour. Educ. Psy.*, 12, 314-322) was made on 441 Lincoln School pupils, each receiving from 2 to 8 tests at the hands of 39 different examiners, and distributed over ages from 3 to 18 years. The median change in I. Q. when all possible pairs of tests on the same individuals were compared was .96, the coefficient of correlation between all pairs being .814. Fluctuation of I. Q. in the same child at different ages may be due to: the variable nature of the child himself; practice effects; variable environment; differences between examiners. Some suggestions for overcoming these are offered.—*J. F. Dashiell* (North Carolina).

201. **Jones, H. E.** The intelligence of preparatory school students. *J. Educ. Psychol.*, 1926, 17, 376-383.—One hundred twenty-five boys of the Riverdale Country Day School in New York were tested with the Army Alpha test. The median score was 145, ranging from 164 in Grade XII to 122 in Grade IX. The results from Riverdale were pooled with those from Hotchkiss and comparison made with high school and college scores in Army Alpha. The preparatory school median is found to be from 29 to 36 points higher than the high school medians. The Grade XII in preparatory schools scores higher than seniors in the average college. The author offers some theoretical explanations of these differences and believes the chief selective agencies which send a higher type of mind to the preparatory school are economic and social.—*A. M. Jordan* (North Carolina).

202. **McClusky, H. Y., & Curtis, F. D.** A modified form of the true-false test. *J. Educ. Res.*, 1926, 14, 213-224.—University of Michigan seniors and junior and senior high school pupils were used as subjects. Two sheets were given. In the first the student has only to mark each statement true or false. In the second sheet, he must decide not only whether the statements are true or false, but he must analyze the false ones to detect what the erroneous element or elements in them are, and then must substitute for the incorrect words or phrases others which correct all the inaccuracies in the original statements. This modified form is more difficult than the conventional true-false test. It requires much more time to grade, however. But the modified form is, to a much greater extent, a power test. It gives a much better basis for diagnosis of individual and class difficulties and hence leads to a much better basis for homogeneous grouping. The modified form is more reliable than the older form and is more popular with the abler students. The authors believe that this new form eliminates the element of chance.—*S. W. Fernberger* (Pennsylvania).

203. **Meyer, A. E.** Germany and the I. Q. *School & Soc.*, 1926, 24, 410-415.—The discussion concerns the use in Germany of the intelligence test as a

means of selecting pupils for special training. The German situation is typified by the attitude of three cities—Kiel, which refuses to recognize the tool; Berlin, which employs it in wholesale fashion; and Hamburg, where the test program under the direction of Wm. Stern proceeds cautiously, the selection of children being made on the basis of quality tests primarily (rather than speed tests), standardized teachers' observations, parental judgments, children's inclinations, and school and social group intricacies. The Hamburg scheme is functioning with remarkable success.—*H. L. Koch* (Texas).

204. **Pfahler, G.** *Untersuchung des technisch-praktischen und des technisch-theoretischen Verhaltens bei Schulkindern.* (Investigation of the technical-practical and the technical-theoretical relationships in school children.) *Zsch. f. angew. Psychol.*, 1926, 27, 92-130.—Group tests on elementary school children from 7 to 13 years of age with the purpose of revealing the relation between general intellectual and specific technical ability. There is generally found on the lower levels a certain retardation of technical-theoretical ability as contrasted with technical-practical ability, which is all the more striking since a simultaneous retardation of intellectual school performance at these levels is not common. At the higher levels on the other hand the amount of technical-theoretical ability seems to correspond to the amount of technical-practical ability. Between the 3d and 5th school years lies a turning point in the development of technical ability, which scarcely experiences another increase in the time from the 5th to the 7th school years.—*P. Plaut* (Berlin).

205. **Ruch, G. M., & Degraff, M. H.** *Corrections for chance and "Guess" vs. "Do not guess" instructions in multiple response tests.* *J. Educ. Psychol.*, 1926, 17, 368-375.—From several text books in the general field of United States history there were carefully selected 200 items covering the field. These items were then arranged into tests of various types: (a) 7-response, (b) 5-response, (c) 3-response, (d) 2-response, (e) true-false, (f) recall. There were 100 items in each of the forms of the test. In each of the five forms of the examination there were two groups, the "do not guess" group, and the "guess" group. The coefficients of reliability as well as those for validity were computed. When instructions are given to guess, the chance correlation formula raises the reliability, but when the instructions are not to guess the chance formula appears to be of no value in raising the reliability. For validity, instructions not to guess and the use of corrections for chance seem the best procedure. Instructions to guess have no particular merit.—*A. M. Jordan* (North Carolina).

206. **Ruch, G. M., & others.** *Short answer examinations in the social studies in the elementary grades.* *Pub. Pers. Stud.*, 1926, 4, 274-276.—State diploma examinations of the free answer type in history, geography, and citizenship for two different years, each graded by two independent scorers, were given to 952 pupils finishing the eighth grade. Grades of one scorer correlated with those of the other .62 on the average. The 1923 examinations correlated with the 1924 examinations .43. The 1923 examinations graded by one scorer correlated .38 with the 1924 examinations graded by the other scorer. Recall (completion type), multiple response, and true-false type examinations, all built on the same 100 items of United States History, were compared for reliability and validity, both under "guess" and "do not guess" directions. Reliability coefficients varied from .641 to .950 (recall type .950, true-false uncorrected for chance and under "guess" directions .641). Validity of other types, recall type used as criterion, was indicated by average coefficient .846. Tests given under directions not to guess but corrected for chance answers appear to give best results in the long run.—*K. M. Cowdery* (Stanford).

207. Sandiford, P., & Kerr, R. Intelligence of Chinese and Japanese children. *J. Educ. Psychol.*, 1926, 17, 361-367.—Five hundred Chinese and Japanese children attending the public elementary schools in the city of Vancouver were tested individually by the Pintner-Paterson "Scale of Performance Tests." When the method of scoring was that of the Year Scale Japanese boys ranged from an I. Q. of 70 to an I. Q. of 120 with a median at 115; the corresponding scores for girls ran from 60 to 160 with a median at 112.8. The Chinese males ranged from 70 to 150 with a median at 107.7, while the girls ran from 40 to 140 with a median at 107. When the scores are evaluated by the point score method, or median mental age, the I. Q.'s do not run so high.—A. M. Jordan (North Carolina).

208. Slocombe, C. S. The constancy of "g," general intelligence. *Brit. J. Psychol. (Gen. Sect.)*, 1926, 17, 93-110.—Accepting Professor Spearman's theory of the resolvability of each capacity into a general and a specific ability, an endeavor is made to determine variations in the former. In the first part of the experiment the investigator repeated upon a homogeneous group of children a single form of test with varying material. Correlations between performances a week apart are high (.68 to .86), decreasing to as low as .52 as the number of weeks between correlated performances increased (to 7). The mathematical criterion of Tetrad Differences is applied to determine the presence of additional "group factors"; and such factors are concluded to be present. Accordingly several independent forms of tests, with varying material, were applied to other, specially selected groups, and the correlations between the separated performances proved now to be independent of the length of interval. No group factors were found under these conditions. It is concluded "that 'g' really is constant, and that any apparent variations found by testing are to be attributed to varying group factors involved in the tests used, and that the appearance of such variation is to be regarded as a serious defect in tests."—R. R. Willoughby (Clark).

209. Strachan, L. Distribution of intelligence quotients of twenty-two thousand primary-school children. *J. Educ. Res.*, 1926, 14, 169-177.—Stanford Revision given to children of kindergarten, first and second grades in the schools of Kansas City. The medians for the children in the kindergarten are higher than those of the 1st and 2d grades and higher than the Terman distribution. Those for the 1st and 2d grades are slightly lower than Terman. Colored children are compared with white children and the distributions for the colored children are lower. But the same superiority of the colored kindergarten children is found over the colored children of the 1st and 2d grades.—S. W. Fernberger (Pennsylvania).

210. Strasheim, J. J. A new method of mental testing. Baltimore: Warwick & York, 1926. Pp. 158.—A series of tests, based on Spearman's definition of intelligence, which involve the eduction of relations and of correlates. Three series of stories are read. In the first story of each set a principle or relation is indicated. The other stories in each series present situations of increasing difficulty which can be solved only by the application—which of course involves the understanding—of the relation. The tests are applied to some 30 children ranging in age from under 5 to over 10 years and the results in each case are analysed. In a second part, the author attacks the part played by intelligence in learning. Young bright children are compared with older dull children in a series of maze tests and in a complicated cancellation test. The younger bright children do better than the older dull children when these tests become so complicated that relations, and hence intelligence, are involved.—S. W. Fernberger (Pennsylvania).

211. **Thurstone, L. L.** The scoring of individual performance. *J. Educ. Psychol.*, 1926, 17, 446-457.—A method of scoring is proposed which enables an investigator without too much labor to combine into one individual score a large number of scores secured in various tests. The principle of scoring is that the valid score on a series of tests is the score having above it as many successes as there are failures below it. A formula is derived which locates this point properly and several illustrations make its application clear. It is claimed for this method that by its use: (1) It is not necessary to have the same number of test elements at different levels of the scale. (2) It is possible to omit several test questions at different levels of the scale. (3) It is possible to include tests scored in a different manner. (4) An individual may take only a segment of the scale. (5) A rational score may be determined for each individual subject. (6) It takes a minimum of arithmetical computation. (7) It is consistent with psychophysical methods.—*A. M. Jordan* (North Carolina).

212. **Weston, S. B., & English, H. B.** The influence of the group of psychological test scores. *Amer. J. Psychol.*, 1926, 37, 600-601.—Higher scores are achieved in intelligence tests when the subjects work in a group than when they work alone.—*G. J. Rich* (Institute for Juvenile Research).

[See also abstracts 3, 31, 33, 34, 64, 133, 142, 143, 144, 157, 162, 168, 181.]

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